American

FORESTS

JANUARY, 1958 50 CENTS

A conservation address in Latin by the Pope was feature of FAO conference in Rome. Picture identifications on Page 1.

Forestry In FAO page 10

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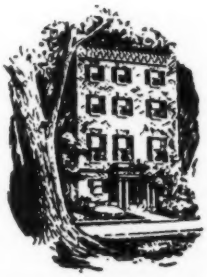
The Cover

1) His Eminence, the Pope, warmly praised the work of the Food and Agriculture Organization of the United Nations in feeding and caring for hungry people. At the Pope's right is the Right Rev. Monseigneur L. G. Ligutti, executive director, National Catholic Rural Life Organization, of Des Moines, Iowa, and an active conservationist in his own right; 2) remnants of a by-gone age that grew soft and perished; 3) the Colosseum; 4) a well-managed coniferous forest—the equivalent of an Italian "Tree Farm" that is an FAO demonstration area; 5) Dr. V. L. Harper, of Forest Service, chief of the American forestry delegation, and right, Henry Clepper, Society of American Foresters, forestry advisor.



The AFA

The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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Forest Forum

Action Wanted

DEAR EDITOR:

Your magazine is getting better with each issue. However, the editorial entitled *"A Committee of 28,000"* strikes me as being a negative and somewhat faltering approach to get action on a very important subject or problem. Now a dog can shake his head but the head, though it encases the brain, cannot shake the dog.

The AFA must provide the leadership to shake the membership into action; otherwise AFA will perish. And you are not going to let that happen. Of that we are all sure. What we need from AFA is program, a fighting program, that will rally the membership into a willing and fighting task force rather than to serve on a committee searching for objectives.

It is, of course, an established fact that the menace of pests and diseases together with fire take a tremendous toll of wealth, beauty and opportunities for recreation from under our noses each year and that we in too many instances just stand by apparently helpless either for lack of knowledge or lack of will. Of these the latter is the greatest enemy. Therefore I am in complete agreement with the third (3) paragraph of the editorial.

It seems that the sixth (6) paragraph expresses a need we already have in our possession if we only will use it. First we have in the various ways that values can be illustrated, dollars, beauty, destruction etc. the lever to dramatize the problem and focus attention of the public on it. We need only to organize, arrange and publish and keep doing it. As you know a conference now and then and a congress here and there have up to this time failed to organize a fighting task force. Is there any reason to expect greater action from such future endeavors?

Further in regard to paragraph six (6) we do know and you say as much in paragraph three (3) that neither federal, state, local nor private agencies are presently coping with the problem so further determination along that line should not be necessary. The job is not being done and that is all we need to know.

Surely the whole story of the problem must be told on the use of insecticides and fungicides. . . .

Instead of saying help give us the tools say AFA has the tools, the task force, the knowledge and the will to advance and you will find followers with know how, funds, understanding and sponsors from fields little expected. The sky is the limit. I am looking forward with great anticipation to that special issue which I hope will announce also a program of action under strong perpetual leadership.

E. Meyer Hansen
1613 Canterbury Rd.
Raleigh, N. C.

(Mr. Hansen is talking about momentum and drive in his letter but we are talking, at this point, about tactics. [See editorial page 9]. No single group has got the potential to do the job that needs doing in this big field except we conservationists. But before that can happen we must first have a meeting of minds and unite on this subject of poisons and their use in woodlands. Once we all unite on this one problem we agree with Mr. Hansen that the "sky will be the limit." In short, before any general attacks it first behooves him to find out if he has an army behind him. Our quest for facts and information was motivated by this and we might add that we found out what we wanted to know.—Editor)

Of Mountains And Mice

EDITOR:

It is apparent from reading AMERICAN FORESTS that the Board of The American Forestry Association ducked the issue on the Klamath Indian termination problem.

After 4½ hours of deliberation, the mountain labored mightily and brought forth not even a mouse.

Robert W. Chandler
Editor and Publisher
The Bend Bulletin
Bend, Ore.

EDITOR:

When I began to read the article in your June, 1957 issue entitled "Land of the Wocus," I looked forward to a resume of the facts relative to the Klamath Marsh. But Mr. Morse, the author, gave us an essay on migratory waterfowl and wound up with the foregone conclusion that the federal government must seize the 900,000 acre Klamath Indian Reservation in order to save the waterfowl resources of the 17,000 acres of wet land located at the south end of the marsh.

Here are two salient facts that Mr. Morse did not mention—he probably does not know that they exist:—(1) The U. S. Fish and Wildlife Service has the authority to step right into the federal court today and condemn said 17,000 acres for use as a federal migratory wildlife refuge. A similar suit is pending in the federal court at Billings where the Reclamation Bureau is currently condemning the dam site for the so-called Yellowtail Dam, property that is owned by the Crow Tribe. The courts have held that both types of taking are for a "public use." The existence of an Indian treaty and of Indian ownership is no obstacle. Therefore, Mr. Morse might move more swiftly if he would address his pitch to his friends in the Fish and Wildlife Service. It ought to be easier to nudge such a small tract into federal ownership than to tackle the entire reservation which has a value of around $300 million now that the two states and the Congress have ratified the Klamath River Interstate Compact. This document recognizes the prior right of the tribe to the water of the river and the value of its reservoir sites which will store 1 million acre feet of water and thus add to the production of crops, electric energy and migratory wildfowl. (2) The marsh consists of an additional 60,000 acres that are owned by Indians and whites. This acreage, which is an irrigated pasture for the most part, slopes to the south where you will find the 17,000 acres that Mr. Morse is worrying about. If the latter acres were drained by a purchaser, the water table would be drawn right out from under the upper 60,000 acres, making them valueless. Therefore, the owners of the upper tract (and they are some of the wealthiest citizens in Oregon) would naturally buy up the 17,000 acres and hold them in their present condition in order to protect the long end of their investment. In June, 1954 the Reclamation Bureau released its comprehensive report on the Klamath River Basin. Attached thereto is a supplemental report prepared by the United States Fish and Wildlife Service. This report is rather complete and deals primarily with the wildlife resources of the Upper Klamath Basin and is of course primarily interested in the migratory water fowl and in the Upper Basin acreage which is adaptable to water fowl and which has been primarily dedicated to and might hereafter be made available primarily for wildlife uses. This report does not advocate federal purchase of the Upper Klamath Marsh or any part thereof and apparently goes along with the recommendation of the Reclamation Bureau that a part of the Klamath Marsh area is adapted to improved agricultural methods while other parts are so marshy and boggy that they would not warrant capital expenditures in hopes of increasing the economic returns.

Forrest E. Cooper
420 - 1st Street North
Lakeview, Oregon

EDITOR:

The articles regarding Klamath timber have been followed with interest. It does not appear from the November issue that private interests are in a position yet to purchase the Klamath timber. The only alternative seems to make it necessary for the federal government to acquire the property at its fair market value, but the government should not aggravate the inflationary spiral by making a lump sum payment for the timber.

(*Turn to page* 72)

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Stand Firm, Mr. Secretary

According to *Time* magazine, wildcatters in Anchorage, Alaska, bars and hotels await the word from Interior to rush in and overrun the big Kenai Moose Range in their search for oil. Say U. S. conservationists everywhere in one voice, "Let 'em keep right on waiting!"

CONSERVATIONIST and oil man declared himself on the new regulations proposed by Interior Secretary Fred A. Seaton for control of oil and gas leasing on federal wildlife lands in Washington on December 9 and 10.

There was no middle ground. This became clear shortly after the hearing opened in the department auditorium under the joint chairmanship of Assistant Interior Secretaries Roger C. Ernst for public lands management and Ross Leffler for fish and wildlife. Stripped to its core, the regulations disagreement emerged as profit seeking versus the public interest in the wildlife, recreational, and aesthetic values of the federal wildlife lands.

By DANIEL A. POOLE

Proposed by Secretary Seaton, the new regulations obviously stem from his desire to end the widespread criticism that flared nationally in 1955 over an order of his predecessor that relaxed restrictions on wildlife refuge oil and gas leasing. Former Secretary McKay's controversial order, plus the discomforting prospect that the Interior Department had approved many applications for oil and gas leases on wildlife lands during the 27 months a so-called "stop order" was in effect so that the overall question could be studied, prompted the introduction of several bills in Congress for the protection of the refuges. An investigation by the Merchant Marine and Fisheries Committee followed and an unanimous report of censure was adopted concerning the manner in which the oil and gas leasing was being administered by the department.

Up until McKay's 1953 "stop order" the report pointed out, only 11 leases had been issued on wildlife refuges since 1920. Sixty leases were granted between the issuance of the suspension order and the imposition of the controversial regulations on December 2, 1955. About 214 leases were granted on other federal wildlife lands during the 27-month no-leasing period in contrast to 281 issued during the 33 years preceding 1953.

Fontanna Leads Ticket in AFA Election; Dean Preston Is Newcomer to AFA Board

THREE foresters, a prominent clubwoman and former state senator, a Pennsylvania farmer and agricultural leader, and a public relations expert have been elected to the Board of Directors of The American Forestry Association in a vote that topped all previous records.

Leading the ticket was Stanley G. Fontanna, Dean, School of Natural Resources, University of Michigan, who was re-elected for a three-year term. Dean Fontanna has been active in AFA affairs for many years and was an anchor man at both the Higgins Lake Conferences and the last two American Forest Congresses.

Running second in the balloting was Mrs. Katharine Jackson Lee, of Peterborough, New Hampshire, former State Senator of New Hampshire who has campaigned vigorously to have the AFA take a more active role in water conservation programs. Mrs. Lee was re-elected.

Also re-elected for three-year terms were Philip W. Smith, New Hope, Pennsylvania, dairy farmer and conservationist, whose Evergreen Farms in Bucks County are soil conservation demonstration areas on contour terracing; and Harold B. Shepard, Boston, Massachusetts, forest economist, who spearheaded AFA studies on forest fire insurance and woodland credits.

Re-elected for a one-year term was Henry T. McKnight, Vienna, Virginia, formerly with the advertising firm of Batten, Barton, Durstine and Osborn in New York City, owner of Cornwall Farms in Minnesota and Virginia, and Secretary of President Eisenhower's Interim Agricultural Advisory Committee in 1952.

A newcomer to AFA's board for a three-year term will be Richard J. Preston, Jr., of Raleigh, North Carolina, Dean, School of Forestry, North Carolina State College. Mr. Preston has been very active in North Carolina forestry and conservation affairs and is one of the key men in the North Carolina Forestry Association.

Tellers who counted the votes were Kenneth B. Pomeroy, chief forester of AFA, A. G. Hall, consulting forester, and James B. Craig, secretary. The Elections Committee consists of George L. Drake, chairman; Maurice K. Goddard, and R. Vance Miles, Jr.

Shortly after taking office Seaton halted processing of new oil and gas applications on the federal wildlife lands thereby delaying further inroads by oil and gas operators on refuges under the old McKay order.

The new proposal is sweeping and clear. It recognizes four classes of federal wildlife lands — national wildlife refuges, big game ranges, Alaskan game areas, and federal-state coordination areas. No leasing would be permitted on any of the national wildlife refuges unless the U. S. Geological Survey showed that the government was losing petroleum resources through underground drainage to peripheral wells. Leases would be considered then, if recommended by the U. S. Fish and Wildlife Service and approved by the Secretary. Lessees would have to comply with conditions imposed by the service for the protection of refuge wildlife and their habitat.

On the three other classes of federal wildlife lands, the Fish and Wildlife Service and the Bureau of Land Management would determine jointly the portion of each wildlife area that could be opened to oil and gas exploration. Leasing would be permitted on the exempted areas so long as the operators complied with the protective provisions written into each agreement. The remaining part of each wildlife reservation, that is, the area decreed essential for the survival of wildlife, would be administered the same as the national wildlife refuge units. Drilling would be permitted only when outside drainage was proved, with the recommendation of the service and the approval of the secretary.

As initially published in the *Federal Register* on October 11, 1957, the proposed regulations received prompt endorsement by leading wildlife advocates. Here, they reasoned, was a set of regulations designed to protect wildlife lands from uncontrolled exploitation. Wildlife again would be recognized as the number one natural product of wildlife refuges.

The public hearing was announced early in November, and Washington soon was humming with rumors that the oil interests were preparing to vigorously press a concept of "compatibility" between their operations and wildlife, while opposing the regulations. It was against this background that the hearing commenced.

Leading off the list of witnesses in behalf of the commercial oil interests was Governor Milward L. Simp-

(*Turn to page* 70)

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Earl L. Koch, Asst. Chief
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Reading about RESOURCES

By MONROE BUSH

The Pinchot Years

DAVID Cushman Coyle is a liberal. Beside that, he is an engineer, an accomplished writer, a diagnostician of public ills, and most important, a gentleman of deep conscience. Yet for the mere fact of his devoted liberalism, many readers may brush aside these other qualifications and ignore Coyle's latest and best book, *Conservation* (Rutgers University Press. 1957. 284pp. $5.00).

Its subtitle, "An American Story of Conflict and Accomplishment," suggests the unfolding fifty years of conservation which reach from Pinchot to Morse, from Ballinger to Dixon-Yates. No living American could have told it better. Invariably accomplishments have out-weighed defeat, and hardly without exception they have been the work of great liberals of Coyle's own stamp, many of whom he knew and worked with personally. It would be no more sensible for a deep-dyed conservative to chronicle these fifty years of conservation than for a Frenchman to write a cultural history of the U.S.

Gifford Pinchot is Coyle's hero, as indeed he was the hero of this entire era. The forests east of the Mississippi had been torn and mauled by generations of cut-and-get-out lumbermen when the young Pinchot made the decision to go to Europe to study the new science of forestry. It seemed a strange and eccentric thing to do. His friends struggled to dissuade him. Had they succeeded, there would likely have been no one to channel Theodore Roosevelt's great love of nature into effective programming for the preservation of the nation's resources. Without the sound conservation basis which Pinchot laid through T.R., American industry would most certainly not have today the resource wealth which gives capitalism its strength; and we citizens would not have this incredible prosperity. For Pinchot was a forester of great breadth of mind; every fundamental conservation policy today is either based directly upon his work, or inspired and stimulated by it.

Pinchot inevitably lived in the midst of controversy. The traditions of his life are still good for many an argument. Most debated of his principles is the matter of governmental regulation of private land cutting. Coyle sums up very neatly this historic tussle when he writes: "Pinchot was then and always for federal regulation of cutting on private land. To promote that cause he organized a Committee for the Application of Forestry.

"On the other side of the argument was The American Forestry Association, whose president from 1916 to 1923 was Charles Lathrop Pack. Pack had made a fortune in southern pine and had decided to devote himself to the restoration of the forests. But he believed the states and private owners would do the job without federal compulsion."

This direct and dispassionate reporting distinguishes the entire book, whether he is writing of such conflicts as that between Pinchot and Pack, or of such accomplishments as the "good evidence that the forest resources of the United States have been improving since the Forest Service was established in 1905, and especially since the Capper Report of 1920. The rate of tree growth in the nation appears to have doubled since 1920, and it seems to be increasing."

> *"We have made progress toward sound forestry and soil conservation — enough to escape some of the dire consequences that the early leaders of conservation were predicting with good cause fifty years ago. We have not escaped high prices and poor quality in lumber, however, and in 1955 there were new dust-storms on the high plains."*
>
> **David Cushman Coyle,** *Conservation*

The record of soil conservation, as that of forestry, is very much the record of a single great life. Hugh Bennett began work in 1903, laboring with little recognition and no success throughout the period of Pinchot's most decisive leadership. Not until FDR's first term did he have the support for real achievement; but when it came, it was support of which Pinchot never dreamed!

Coyle recounts the hot day in 1935 when Bennett was appearing before a Senate committee, seeking desperately funds with which to fight the growing dust bowl. The senators were apathetic.

"Hugh Bennett," Coyle says, "was in the position of Moses when Pharoah refused to let his people go: he needed a miracle. Sure enough, as he sat at the hearing the sun over Washington was blotted out by a great western dust cloud.

"Bennett stood up before the senators. He pointed out the window and said: 'There, gentlemen, goes part of Oklahoma now.' And there they saw it, driving past on the wings of the wind.

"He got the money, and his men went out to fight the marching desert."

Coyle reminds us that the battle to hold the soil is far from won, will

(*Turn to page* 46)

By ALBERT G. HALL

CONSERVATION CANNOT BE BOUGHT OR COMPELLED, Ervin L. Peterson, Assistant Secretary of Agriculture, said last month to the Washington section of the Society of American Foresters. Mr. Peterson emphasized that wise use of the land and its resources must be the product of education and conservation, with the federal government assuming a role of cooperation and stimulation of the people in their private capacities. He emphasized the need for the direction of federal expenditures for forest conservation toward more intensive management of federal lands rather than expanding programs which should be the responsibilities of the states or of individuals. Mr. Peterson, in answer to questions, reaffirmed the department's opposition to forest products price reporting as a federal activity, pointing out that national price reporting in this field would be impractical and that the states should undertake such price reporting as may be necessary.

TRANSFER OF ENTIRE FARMS from crop production to trees, grass and other soil saving crops is being tried experimentally by the U. S. Department of Agriculture in four states – Illinois, Maine, Nebraska, and Tennessee. The plan as announced by Secretary of Agriculture Benson will be to concentrate on encouraging farmers to shift from the farm to the city by placing their areas under the conservation reserve phase of the Soil Bank program. In these states, conservation reserve subsidies will be raised from the present $5,000 annual maximum to a limit of $10,000. In addition, the contracting farmer will receive, as is now the case, up to 80 percent of the cost of planting trees or grass. Annual rentals paid elsewhere under the conservation reserve average around $10 per acre. In this new experiment farmers wishing to participate will bid for contracts with the resultant new rates expected to be higher than the present $10 national average. The new Benson plan is a forerunner of the abandonment of the acreage reserve phase of the Soil Bank, under which farmers may enter short-term, one-year contracts for crop reduction. Conservation reserve acreage is placed under contracts ranging from three to fifteen years. The new trial program follows in some respects the proposal of the Committee for Economic Development for the return of the farm economy to a free market by reducing price supports and urging low-income farmers to seek other occupations. Expansion of the conservation reserve, assuming that the new plan will be successful in its trial run and is extended to other states, might result in a demand for tree planting stock that will tax the capacity of public and private nurseries, but it would be a mistake at this time to hail the program as an advance in applied forestry. Purpose of the program is social and economic – an attempt to return farming to private enterprise and to bring a halt to ineffective farm programs which are estimated to have cost nearly $45 billion over the past quarter century. If successful forest plantations are established and managed to produce quality timber, much more will be required than the subsidized movement of farmers off marginal farms.

THE SHIFTING OF FEDERAL ACTIVITIES TO THE STATES as proposed by a special committee of state governors in cooperation with the White House, will probably not be extended to forestry and other conservation activities. The proposal which calls for the shift of such programs as vocational education, financing of waste-treatment plants, slum clearance and disaster relief from the federal government to the states in return for the federal government's relinquishment of 40

(Turn to next page)

percent of the telephone tax, will probably not be considered by the National Governors' Conference until its May meeting in Miami. A study of federal-state-private responsibilities in protection from forest fires now being conducted by the Battelle Memorial Institute will not be completed until June. It is expected, however, that the swing in Administration recommendations toward reduction of farm program subsidies and toward shifting responsibilities toward the states as indicated above will be reflected in budget recommendations in federal-state forestry and other conservation activities.

ACTIVATION OF PART II OF "OPERATION OUTDOORS" covering the wildlife phase of the big national forests improvement program was urged by leaders of 14 national conservation organizations on December 17 in a letter to President Eisenhower. The conservationists, including Chief Forester Kenneth B. Pomeroy, of AFA, praised the President for his long-range programs to improve national parks and forests for the recreational public but pointed to the fact that "Part II" of Operation Outdoors has yet "to get off the ground." The concerted action followed a meeting of conservation groups to discuss legislative problems called by the National Wildlife Federation. Both the "Mission 66" and "Operation Outdoors" programs are being given tremendous public support on the basis of information received by all conservation organizations.

LEGISLATION FOR INCREASED RESEARCH IN THE USE OF AGRICULTURAL PRODUCTS for industrial purposes is expected to receive attention in the second session of the Congress. While several bills for this purpose were introduced in the first session, it is likely that these will be considerably revised in committee or supplanted by new measures. Federal departments concerned with the program are now preparing reports on the legislative proposals. Among the recommendations are greatly increased funds for the Forest Products Laboratory and for federal grants to schools and other research agencies conducting forest products research. Principal emphasis in forest products research as recommended by the Department of Agriculture's Forest Research Advisory Committee should be on the pulping of hardwoods, on timber harvesting, on the development of log and tree grades, and on the protection of wood in use. In addition, the President's commission on the increased use of agricultural products for industrial purposes recommended studies in naval stores, chemical utilization of hardwoods and the seasoning of hardwoods. In terms of the recommended program, low-grade hardwoods are considered surplus agricultural crops, the utilization of which would provide income-producing outlets for the farm economy.

A NEW WILDERNESS BILL will be presented to the Congress, and it is expected that pressure will continue towards its enactment. The new bill, now being circulated in draft, meets some of the objections to the earlier one, but is unlikely to cause the opposition to withdraw from the basic position that wilderness and wild areas now established administratively should continue under existing policies. Mass recreationists – those who want access and facilities for recreational enjoyment – are reported now to be opposed to setting aside large areas for purely wilderness enjoyment. They appear to be more inclined to support the proposed National Outdoor Recreation Review bills which would appraise recreational needs and propose programs to meet them. The review bills may be defeated, however, by conflicting proposals as to jurisdiction. The original bills set up a broad review commission, but counter proposals have suggested that the review be conducted by the National Park Service. In the meantime, National Park Service is conducting its own review as part of its Mission 66 program.

A CALL FOR AN ALL-OUT CAMPAIGN TO MAKE DINOSAUR NATIONAL MONUMENT the 30th national park has been issued by the aggressive Council of Conservationists, of 588 Fifth Avenue, New York 36, N. Y. The Council is organizing conservationists behind S. 2577, the bill introduced by Senator Gordon Allott, of Colorado. Asked where it stood on the proposal, The American Forestry Association said last month it would prefer to talk to Senator Allott and others regarding some of the language in the bill before committing itself. In the past, AFA's board has always contended that all national parks should not only be "for future generations but also foolproof."

Editorial

Double-Barreled Challenge

Forestry and research were handed a double-barreled challenge on two consecutive days in New York State on November 12 and 13 when two prominent conservationists practically dared the professionals to get down to brass tacks in giving the public all the facts, pro and con, on the growing use of insecticides on forest land.

Speaking at the convention of the National Audubon Society Nov. 12 in New York City, Dr. Paul Sears, of the Yale Conservation Program, told the members, "Science's basic job, without any gloss, is to give us the picture (in pesticide hazards) right side up." Audubon delegates heard that the toxic effects of DDT might last five to seven years and that at least 500 newer and more lethal pesticides are being developed but that "no one seems to know just what their properties are."

Arriving in Syracuse for the meeting of the Society of American Foresters the following day, Dr. Fairfield Osborn, president of the Conservation Foundation, told the foresters, "I would like to voice the apprehension felt in many quarters concerning the present and growing practice of the widespread spraying of pesticides from airplanes aimed at controlling insect infestations such as gypsy moth, the budworm and so forth. This apprehension, stems as you know, from the evident severe damage done to the biotic environment, especially birds, fish and many lower forms of animal life as a consequence of this *mass poisoning* . . . Of course, we all recognize that there are economic advantages which presumably are the result of pest control. We, together with everybody else, have to admit, however, that not enough is yet known concerning the long-term effects of widespread pesticide controls. There are those who doubt that even from the point of view of the forests themselves, the great expenditures that are being made in this direction are justified and actually succeed in their objectives except on a temporary basis. A tremendous amount of research is needed on this subject and it would be of very great value if your national society could to a greater degree focus its attention upon the pros and cons of this question."

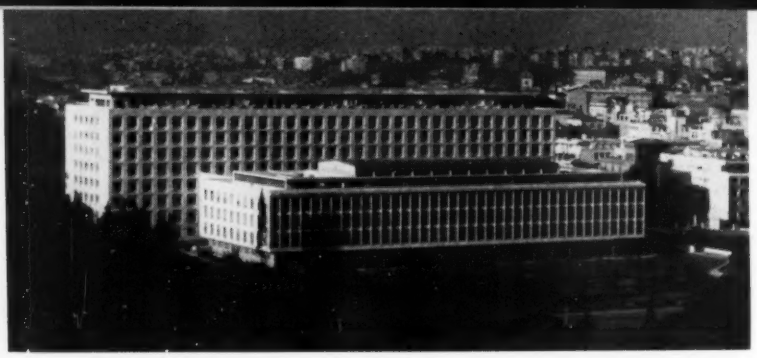
Well, why not focus on it? This is a legitimate request for facts if we ever heard one. Moreover it is backed by the force of a growing segment of the population that, rightly or wrongly, is expressing concern regarding the growing use of pesticides. Let us face the fact once and for all that poisons and their use are a deadly serious matter. Their use in connection with plant and animal life, even when predicated on proven scientific fact, should be attended by the best possible educational programs. These programs should make certain the public is honestly and completely informed on just what the properties of the poisons are and what they will or will not do, not only in terms of diseased trees or plants but also in terms of other forms of life that have the right to exist too.

As laymen, we are not prepared to say whether all of these lethal sprays have been sufficiently tested or not; but we are certain that the public relations effort that has attended some of these efforts have been a case of "too little and too late" as witness the outcry that has been made in a number of areas including New York State. One organization currently in the field fighting insecticides has adopted a human death's-head as its official insignia. When a reader opens his letter he sees two hollow eyes glaring at him from a human skull. Pretty childish business, as some have said? Perhaps. But it would seem to evince a certain amount of suspicion as to the efficacy of our efforts.

On the credit side, most of us know of at least one or two efforts where science and public relations worked in tandem effectively in giving the public the facts regarding chemical programs. We recall one in New England a few years ago on chemical debarking. Sodium arsenate applied to a gash in the trunk peels the tree on the stump thereby eliminating the tedious peeling operation. The payoff economically was man hours of work saved and more cash for the wood owner at the pulp mill. The question to be solved was whether the arsenate solution was injurious to wildlife.

To solve the problem, northeast industry retained the best scientific talent it could find and spent several years probing every facet of the subject. Then it invited in all representatives of the press in New England, gave them the unvarnished facts and then told them in effect, "You be both the judge and the jury as to whether this is in the public interest or not." This was both smart research and smart public relations. The verdict was overwhelmingly in favor of the project. In other words, the public got the facts "right side up."

On the other hand, let's not deny there have been cases where these spraying programs have gone haywire with the public aroused not to say downright fighting mad. As the AFA digs into this whole insects and disease field in 1958, it occurs to us that one effective way to get this problem laid out in terms of the "pros and cons" is to invite talent from the government, the industry, the wildlife organizations and, of course, Dr. Sears and Dr. Osborn, to give the public the various points of view "right side up." A tape-recorded round table discussion edited for publication in *American Forests* could at least pinpoint the areas of agreement and disagreement and might even point the way to some equitable solutions. A meeting of minds is needed on this subject and the sooner we get started the better.



Headquarters building of the Food and Agriculture Organization, Rome, Italy.

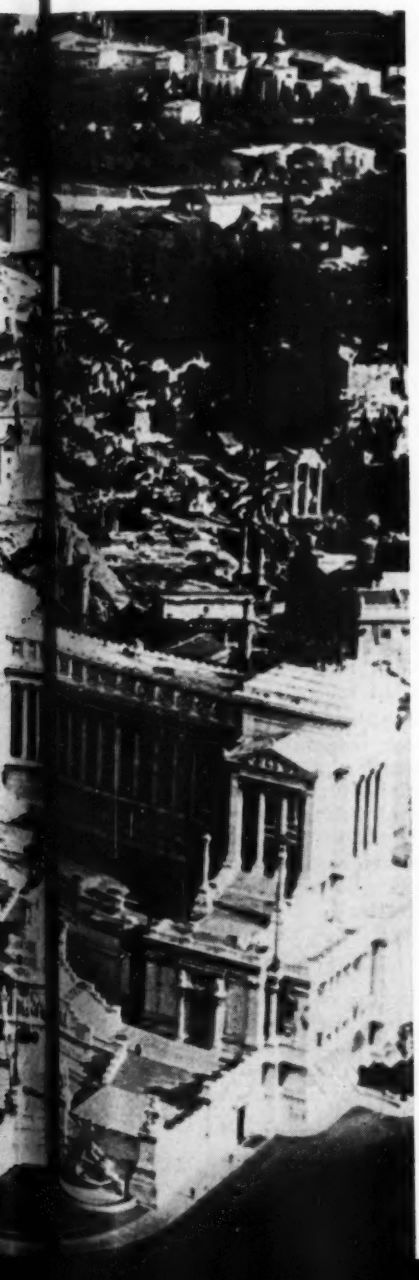
By HENRY CLEPPER

FORESTRY IN

Via dei Fori with Victor Emanuel II Monument in foreground, the Colosseum in background. *Photo courtesy of Italian Embassy.*

FAO

ROME, Italy—The Ninth Conference of the Food and Agriculture Organization of the United Nations, which convened November 2 and adjourned November 23, was attended by 542 delegates and observers from 77 member nations. Heading the U.S. Delegation, which numbered 22 persons including six members of the House of Representatives, was Ralph S. Roberts, Administrative Assistant Secretary of Agriculture.



Secretary of Agriculture Ezra T. Benson was present during part of the conference, and in an address before the plenary session on November 7, made a statement widely quoted in the world's press. He said that U.S. farm production will continue to be abundant, but that it will be significantly lower than if there had been no soil-bank program to withdraw croplands from production. In short reforestation helped reduce our agricultural surpluses.

Forty foresters from 31 nations comprised the Technical Committee on Forestry which held six sessions, one of them jointly with the Technical Committee on Agriculture. Richard E. McArdle of the U.S. delegation was designated chairman of the committee. Senor Paulino Martinez Hermosilla, Director General de Montes, Madrid, Spain, was elected vice-chairman.

Two additional foresters were on the American delegation: V. L. Harper, assistant chief (research), U. S. Forest Service; and Henry Clepper, executive secretary of the Society of American Foresters.

Among the representatives present who are well known to American foresters were Eugenio de la Cruz, Director of the Forest Products Research Institute of the Philippines; Professor Eino Saari of Helsinki University, Finland; F. L. H. Johansson, Overdirektor of the Board of Forestry, Stockholm, Sweden; A. Y. Goor, Director of Forests, Nathanya, Israel (a graduate of the Yale School of Forestry); K. H. Oedekoven, Ministry of Food, Agriculture and Forestry, Bonn, Germany; Sir Henry Beresford-Peirse, of the United Kingdom Forestry Commission, London; and A. L. Best of the Canadian Department of Northern Affairs and Natural Resources, Ottawa. Professor Aldo Pavari, Director of the Forest Experiment Station at Florence, Italy, which many American research foresters have visited, was also present as the representative of the International Union of Forest Research Organizations.

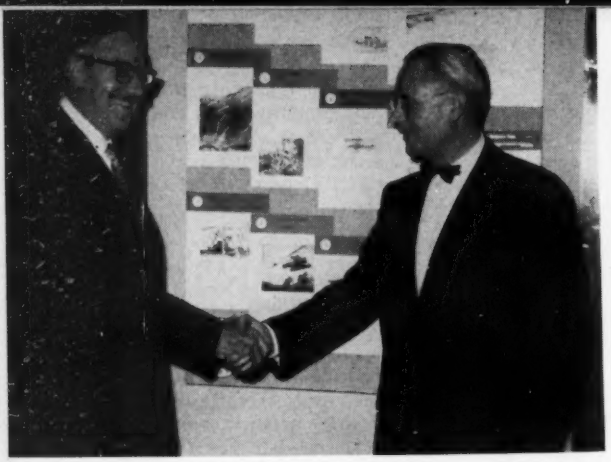
Forestry's Role in FAO

To understand forestry's place in FAO, the following digest may be useful. At a conference of FAO held at Quebec in 1945, forestry was assigned a most important role: to help provide supplies of forest products, in suitable quality and sufficient quantity, needed for world consumption. Thus, the activities of the Forestry Division include not only the growing of forests and the harvesting of timber, but the marketing and distribution of their products.

This work, under the Forestry Division, has progressed in four general directions: (1) through advancing scientific management and improved techniques of silvicultural practice, to increase the yield of existing world forests; (2) through more efficient logging operations and manufacture processes, to reduce waste of raw material; (3) in nations where virgin forests are not being utilized because of inaccessibility, particularly in tropical regions, to open up such areas for development; and (4) through reforestation, to establish new forests both for the economic use of products and for the protection of watersheds and the prevention of soil erosion.

In forestry, therefore, is centered significant aspects of FAO. To be sure, world problems of nutrition and health are, understandably, of major concern to all the nations holding membership in FAO. But the manifold contributions of useful products and services possible through scientific forest management are becoming increasingly better un-

From left, Prof. Eino Saari, Finland, Chief R. E. McArdle, U. S. Forest Service, Henry Clepper, Society of American Foresters, Marcel Leloup, FAO, Prof. Aldo Pavari, Italy. The latter has been a visitor at AFA headquarters in Washington.



V. L. Harper, right, chief of U. S. forestry delegation greets Henry Clepper, left, his advisor for conference.

Left, Marcel Leloup, director, Division of Forestry, FAO; Forest Service Chief R. E. McArdle, chm., Forestry Committee; and C. Fugali.

FORESTRY RESEARCH WORK OF FAO

By DR. V. L. HARPER

PROVISIONS for FAO participation in both a Near East and a Latin American forestry research center were approved by the Ninth FAO Conference during the meetings in Rome in November, 1957.

The Latin American regional research center is already under way at Merida, Venezuela, having been initially authorized two years ago. In cooperation with the government of Venezuela, FAO is undertaking studies in forest products, dendrology and silviculture all of which are being planned for the benefit of South American countries. This recent action at the conference would extend for another two years FAO's participation in this regional research undertaking pending the development of a firmer basis for financing the center's activities by the interested South American countries.

The research center authorized for the Near East will be located in Syria and will be established as a cooperative project between FAO and the government of the Republic of Syria. Member governments of FAO in the Near Eastern Region are expected to contribute funds for the continual operation of the center.

These recent activities by member governments of FAO at the 1957 conference are in line with policies developed over the last ten years concerning the importance of research in the proper development of natural programs of forestry. One of the early studies of FAO concerning a desirable policy for member governments stressed that each country should have a complete forestry research organization. However, the development of adequate national research institutions for forestry among many of the underdeveloped countries may not be achieved for some time to come. Meanwhile, these regional centers should fill a real need.

Other research activities of FAO's Forestry Division include assistance to member countries in establishing national research institutions as illustrated by the recent development of a Forest Products Laboratory in the Philippines. Under the able direction of George Hunt (retired from U. S. Forest Products Laboratory) employed by FAO under its technical assistance programs, a modern new laboratory already has been constructed by the government of the Philippines. And technicians are now being trained to conduct a program of forest products research.

In addition, FAO cooperates with the International Union of Forest Research Organizations on such projects as developing an international system for improving the quality of forest tree seeds, forest bibliographies, and the compilation of a directory of forestry research institutions of the various countries.

derstood, and they are desired by all nations.

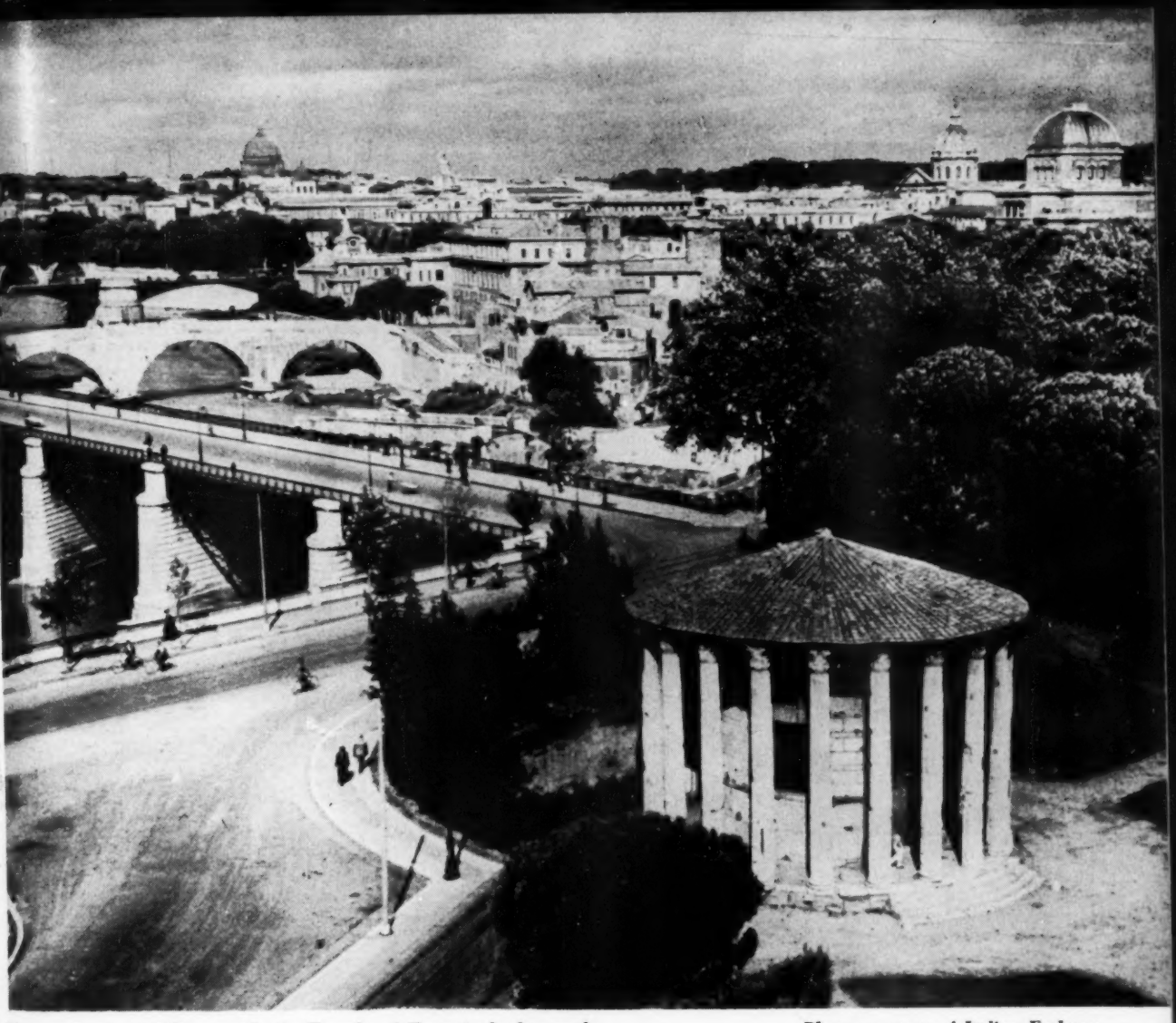
Most Americans think of FAO as a great international organization of governments created specifically to help the underprivileged peoples of the world, which in effect means to help the underdeveloped nations. While this concept is true, it falls short of explaining the whole function and purpose of FAO. On no logical basis can the United States be considered a have-not nation. So great has been the abundance of our agricultural production that our surpluses help feed the world.

In the application of forestry and in consideration of the enormous acreage of woodland under protection and management, our country is *a*, if not *the*, leading nation in forestry. Yet the progress of forestry in America, substantial as it has been, cannot be a cause for complacency in view of the tremendous job that needs to be done. In brief, the need for continuing forestry advances in wealthy "has-got" America is no less insistent than the need for improvement in forest conservation in the so-called underdeveloped nations.

Parenthetically, FAO is one of several international organizations to which the Congress makes substantial contributions. About 33 percent of FAO's biennial budget of $17,000,000 is paid by the U. S. Approximately 14 percent of FAO's budget goes to forestry, directly and indirectly.

The Forestry Division

Director of the Forestry Division is Marcel Leloup. Egon Glesinger is Deputy Director. Both are well known in the U.S., having appeared on the programs of national meetings both of The American Forestry



Panoramic view of Rome with the Temple of Vesta in background. ***Photo courtesy of Italian Embassy.***

Association and the Society of American Foresters. M. Leloup is a professional forester. Dr. Glesinger is a forest products economist.

Besides these, the divisions' headquarters staff includes 27 foresters and forestry technicians. Technical operations are centered in three branches: policy, technology, and economics.

A well-known American forester, I. T. Haig is Chief of the Technology Branch, two of whose members are also foresters of American origin—M. A. Huberman and J. M. Yavorsky.

In addition, FAO maintains three regional forestry offices: the Latin-American office at Santiago, Chile; the Asia and Far East office at Bangkok; and the Near East office at Cairo. Significant of the importance attached to the work of these regional offices is the fact the conference recommended that they be strengthened by adding one officer to each station, and that an additional office for Africa be established.

An expansion in the technical assistance program was also given high priority. This is an activity through which FAO (1) tackles general international problems and (2) deals with specific problems.

Examples of the first category are world forestry congresses and international conferences on such subjects as poplar, chestnut and eucalyptus, pulp and paper, fibre boards and particle boards, and logging and related forest operations.

Direct technical assistance takes many forms. FAO experts helped set up a school of forestry at the University of Santiago, regional forest research centers and schools for forest rangers for Latin America in Venezuela and for the Near East in Syria, and a training center in watershed management in India.

According to Director Leloup, the Forestry Division during the past five years handled 195 such assignments in 47 different nations; organized 19 training centers and study tours; and awarded 124 Fellowships.

FAO has also helped member nations to set up forest inventories, to gather and compile statistics on growth and production, to undertake commodity reports on industrial development, to establish forest policies, to make land use studies. Indeed, FAO's activities in forestry are so numerous and global that it would

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LITTER— OUR $100,000,000 DISGRACE

By RICHARD J. HARTESVELDT

DURING the past few years Americans have witnessed the fury of a startling public indignation against a group of people they have come to know as "litterbugs."

The storm is evidenced by a multitude of signs, posters, radio and TV announcements, magazine articles, anti-litter laws and a growing organized resistance upon the part of the indignant. Considering man's many self-created natural resource problems, it seems strange that he should choose to pick more strongly on this problem than on one of more tangible returns such as agricultural crops, forests or wildlife. But he has done just that! Man's sensitive sight has so rebelled against the mess created along roadsides, in parks and along city streets that his indignation has risen to near gale proportions in some parts of the country.

LET'S STOP THESE TORRENTS OF TRASH! Americans love their forests and parks but sometimes they don't act like it! This is what tourists did to one of Washington's most famous landmarks—the Mall leading to the Capitol of our country.

Photo by New York Times

BEFORE TRANSFORMATION—This is the way a vacant lot in Williamsburg section of Brooklyn looked. Litter and rubbish were fire and safety hazards; an eyesore to neighborhood.

Photo by New York Times

AFTER TRANSFORMATION—The area is now an attractive garden of flowers, shrubs, vegetables, and a 10-foot Norway Maple. School children, with adult help, made the difference.

Daily this storm is gathering force and momentum, but there seems hope of sweeping away much of the problem and its cause.

In contrast to other conservation problems, there is no organized opposition to the anti-litter storm. There is no object of personal gain for the litterbug, either singly or as a group. But neither does there seem to be much of a sense of lost values. Litterbugs are simply a minority group of thoughtless, lazy, slovenly Americans who otherwise profess pride in the beauties of their country. They have infiltrated every state, city and hamlet; they are found in every profession, in every income bracket, in all religions and political groups, and thus, like a wire-spread cancer in society, they are difficult to fight. There is no focus at which to direct corrective measures; rather, the attack must be as wide-spread as the disease. The public combat forces number in the tens of thousands and many well-wishing private organizations encourage and aid public-financed abatement programs. A myriad means of prevention and correction have been devised and put into effect at an enormous cost to the tax payer. Some have worked, some haven't. Meanwhile, the insidious disease spreads its infectious disgust across the country.

Estimates of the total amount of litter improperly discarded each year would be impossible to obtain. The figures, I'm sure, would startle even the officials engaged in litter cleanup and prevention. A glimpse of the litter magnitude may be obtained by noting New York City's clean up figures. In 1955, its department of sanitation removed 300,000 tons of litter from its streets and sidewalks. Although some of the material was unavoidable particles of soil, a large proportion of it, including 3,140,000 cans, was public dropped litter. In other cities correspondingly large mountains of trash are cleaned up year after year. Along some roads thousands of items per mile are recovered from their unsightly roadside resting places. The volume of trash is evidenced by a recent Rhode Island clean up campaign which netted workers 16 truck loads from five miles of highway! Often the type of trash may be more important than the actual volume. Facial tissues clinging to shrubs and weeds bring into "bloom" the wide-spread "native tissue bush" (Papyrus nonsanitarius) whose flowers bloom the year round and are so difficult and disgusting to pick.

There is little need to dwell verbally on the unsightliness of litter. It is obvious, if uncomprehensible, and is the major motivating force in the recent nation-wide campaign against it. There are other effects of litter which are vitally important to man's interests but unfortunately are less widely publicized. Last year more than 100,000 motorists were injured and nearly 1,000 killed in auto mishaps when drivers swerved to avoid objects that had been thrown on the roadway. One woman motorist swerved her car into a tree when her headlights reflected on the ends of two beer cans which she thought to be the eyes of a large animal. A litterbug who will never be brought to trial for criminal negligence must shoulder the responsibility for each of these needless mishaps. Less serious, although costly

Thoughtless visitors threw this debris into lovely Morning Glory Pool in Yellowstone National Park in one year.

and potentially dangerous, is the damage done to tires which are easily cut by beer cans and bottles of all sorts. Paper and cardboard along the roadside is a proven fire hazard. Remaining flammable when grass and weeds are unflammable, discarded paper has been partly responsible for more than twice as many fires in the past ten years as during the previous ten. In urban and other crowded areas, physical health is impaired by litter which supports disease-carrying rats, mice and flies. In roadside ditches runoff waters concentrate rubbish in culverts and drains where clogging and flooding creates new nuisances and dangers through local flooding. Trash thrown into Yellowstone's hot springs and geyser tubes have caused eruptive action to cease until cleaned out.

Despite present gains in the fight against litter, America must recognize a growing litter potential as it accelerates its "throw away" economy. More and more packaged goods are being produced in disposable containers and there has been an overall increase in the sale of packaged products. In 1955 Americans bought 650 million more packs of cigarettes than during the previous year. Empty cigarette packages are among the top three litter offenders. Candy and gum sales ($2 billion per year) have increased appreciably, especially during summer months when vacationers buy more than ever before as a source of quick energy for active outdoor sports. The wrappers are all disposable. Americans drank 5½% more soft drinks in 1955 than during 1954, an average of 184.2 bottles or cans per person. The sale of beer in six packs has more than doubled in 5 years' time and accounts for more than half the packaged beer sold today. The ubiquitous beer can is rated as the No. 1 litter offender in many areas. Soft drinks, cookies, milk, cakes, fruit and an increasing host of other edible items are now appearing in disposable packaging. And to buy these products each year are another 2½ million Americans, many of who will follow in the steps of their litterbug parents.

There has probably never been a time when some person or another has not been reviled by litter. Until a few decades ago the nuisance was of problem importance only in local situations. Now it is of national magnitude and has brought about a loud and anguished cry from the disgusted citizenry. Vacationers who are spending hard-earned money to enjoy the pristine beauty of their parks and forests find it marred by the same manner of trash that clut-

ters their city streets. Hard pressed dedicated rangers and custodians, under pressure from the public to clean up their parks, fought the problem to the best of their budgets. But they could not keep pace with the growing problem. As the demand for action grew, public spirited individuals, chambers of commerce, Boy and Girl Scout Organizations, women's clubs, and sportsmen's clubs threw their lot in the ring and came out swinging, but without coordinated effort. Disgust mounted in proportion to the problem and offenders began to be identified by new names ranging in politeness from the overly polite "litterbugs" to *Swinus americanus* and, as one newspaper recently stated it, "dirty slobs." Although "strewball" and "scatterpillar" have been coined as synonyms, "litterbug" is the most often used and seems to be here to stay. Its recent appearance in a crossword puzzle may be construed as evidence of its permanence. Slogans, both good and bad have appeared more frequently in recent years. One of the oldest and most widely used is:

"Let no one say and to your shame
That all was beauty here until you came."

Today we frequently hear or see, "Don't be a litterbug," and in a more positive vein, "Stash your trash," "We have a beautiful country (or city, county, park, etc.), let's keep it clean" and "Keep America beautiful." The last slogan is the name of a young and vigorous organization established after World War II to coordinate the many separate efforts being made and to stimulate further interest in fighting the litter and vandalism problems.

Keep America Beautiful, Inc., known as KAB, is under the leadership of John C. Rose, executive director, and is located at 99 Park Ave., New York 16, N. Y. Operating on tax deductible membership fees and contributions, KAB has undertaken the leadership of the anti-litter campaign by making available many useful services. Anti-litter facts and figures are published in a monthly news service bulletin available to cooperating and interested organizations. It offers 19 different "how to do it" guides on the subject, posters, reprints of magazine articles and bumper strips for cars. KAB's strength lies in its more than 100 members and contributors which represent all phases of commerce in

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GOD'S COUNTRY *from the Fresno Bee*

Cleanup of this road near Oklahoma's State Highway #7 will be costly, due to careless motorists. A litterbag in every car is an aim of Keep America Beautiful, Inc.

OUR SOCIAL RESPONSIBILITIES

By DR. WALTER P. COTTAM

THE battle lines that seem to be forming over the merits and wisdom of the Wilderness Bill, at the moment at least, present to all true advocates of conservation considerable concern and perplexity. For there is the apparent incongruous alignment of a preponderance of our conservation societies and individual supporters of conservation on one side opposing such a renowned resource advocate as The American Forestry Association on the other. If it were possible that the opposition to the bill stems from a basic difference in wilderness philosophy then I say, we have arrived at a sad hour in our struggle for conservation in America. On the other hand, if this conflict reflects merely opposing ideas on the most desirable and efficient means of achieving essentially the same broad wilderness objectives, then the great debate that must surely come should prove to be an unmitigated blessing to us and to posterity.

What America needs most at our present stage of awakening to the vital necessity of a widespread and well integrated conservation program in basic education on the terribly complex and difficult problems involved in the task of "preserving natural conditions in a world of technological dominance." A thorough, frank and honest re-examination of the stewardship of all government agencies administering the public lands included in the proposed wilderness system should not only provide much information on the present status of these preserves, but should indicate some basic principles necessary for their future administration.

Some of the questions that need answering before the Humphrey bill is enacted into law are these:

1.) Are there justifications for the several objections raised by The American Forestry Association? Would the bill, in effect, abrogate the long standing and effective multiple use policy of the national forest administration by recognizing through statute one forest use and denying such recognition to others? Would the bill's broad restrictions on such matters as roads, timber cutting and water empoundment hamper administrative judgment in adjusting wilderness management as to the needs of a changing social order and in fighting the ravages of fire, disease and insect pests that might spread to non-wilderness areas? Would a wilderness council lacking any real authority but imposed between the executive branches of government and the Congress, cause delay in action and incur unnecessary expense? (There is no time to discuss these problems, but I refer you especially to the August 1956 and the January 1957 issues of the AMERICAN FORESTS magazine for The American Forestry Association's views on them.)

2.) Another question, and one which I wish to discuss briefly, is this: Is the provision to maintain the status quo with respect to grazing on wilderness areas within the national forests inimical to the declared purposes of this bill? And should the bill ignore as it does the present status of grazing in our national parks and monuments?

In Section 3, the bill states, "No portion of any area constituting a unit of the National Wilderness System shall be devoted to commodity production," and it lists grazing as one of these commodities. Then comes the usual and disheartening "except as otherwise provided," and here is the exception. I quote in full:

"Within the national forests areas grazing of domestic livestock and the use of airplanes or motorboats where these practices have already become well established may be permitted to continue subject to such restrictions as the Chief of the Forest Service deems desirable. Such practices shall be recognized as nonconforming use of the area of wilderness involved and shall be terminated whenever this can be effected with equity to, or in agreement with, those making such use."

I submit that this grazing concession is wholly inconsistent with and contradictory to the spirit and purposes of the bill. By its own admission grazing must be recognized as

"nonconforming use" on wilderness areas. What possible justification is there for the continuance of a practice on these priceless remnants of a national treasure that would certainly impair if not ultimately destroy the very objects which the bill seeks to protect? Surely this right to graze any wilderness preserve, be it forest land, park, monument or game preserve, can hardly be vindicated on the basis of the material wealth that accrues from this use. No one could deny that the economic health of the grazing industry is important to the West, but we must realize also that in the eleven western states cattle depend on all of the national forests for only 3.6 percent of their feed, and sheep for less than 6 percent. For the nation as a whole the national forests in these eleven western states furnish only 6/10 of one percent of the necessary feed for cattle and only 2.7 percent of the sustenance required for sheep. Considering, therefore, the relatively small percentage of national forest land contemplated for wilderness preserves, the dollar value of grazing them is so small as to approach absurdity.

It is understandable at least why any attempts to eliminate grazing from projected wilderness areas within the national forests would create some problems of management for the Forest Service and most assuredly would bring protests from grazing interests. But what of our national parks and monuments established for purposes that gave them complete protection, at least theoretically. In the convention on Natural Protection and Wildlife Preservation in the American Republics held several years ago, the term "national parks" was defined as denoting areas, "established for the protection and preservation of superlative scenery, flora and fauna of national significance which the general public may enjoy and from which it may benefit when placed under public control."

During the recent debates on the Echo Park Dam controversy, it was reported in the public press that one of Utah's representatives to Congress argued in effect that the flora of Dinosaur National Monument had been so impoverished through over grazing that a beautiful and placid lake nestled amid this desert scenery, which the dam would create, should be preferred by the vacationer to the obvious perfidy of man's action on the landscape seen along the stream banks of the Green River. With this reported statement I am in full agreement. But he was also quoted as saying that the Dinosaur National Monument was the only such preserve in America where grazing is permitted. In this he never could have been more wrong.

To my knowledge no national monument in Utah or park either is free from the destructive influence of domestic livestock. Cedar Breaks is freest from livestock grazing because it is fenced in its entirety, but the present preserved area is so narrow that without buffer land, it can hardly be considered free from grazing influence.

The entire Kolob Division of Zion National Park is in such a state of forage impoverishment and accelerated soil erosion because of grazing that the despoilation here is little short of a national disgrace.

At Bryce Canyon, after nearly forty years of monument and park status, a stock trail is operated annually at the northern end of the park. The absence of fencing on the southern half of the park and along the entire east boundary permits grazing beyond the scenic lookouts at all times and in some places in serious concentrations.

Nor is Utah the only state where livestock are allowed to graze considerable portions of the national parks and monuments. It seems safe to say that wherever these reserves appear unfenced on the open ranges of the intermountain area, grazing occurs.

The Organ Pipe National Monument in southwestern Arizona established for the uniqueness of its cactus flora, common in Mexico but found nowhere else in the United States, harbors several large, private ranches throughout the reserve.

A book prepared by the Park Service and published by the U. S. Department of Interior in 1956, entitled *A Survey of the Recreational Resources of the Colorado River Basin,* described the critical status of the Saguaro National Monument in south-central Arizona, a preserve dedicated to the perpetual preservation and enjoyment of a noble stand of the giant cactus. This rare species seems to depend on an undisturbed litter and duff of the soil for effective germination and establishment of its seedlings. Yet persistent grazing of the preserves has wrought such havoc to the soil surface that this great desert forest continues to grow old with no young to replace their elders. In a plea for public education in conservation, one of the authors of this publication laments: "Such education in the fundamentals of soil and water undoubtedly would enlist more active support for the service in its efforts to eliminate overgrazing from places like Saguaro National Monument where the natural conditions which led to the establishment of this area have been practically destroyed."

Certainly one of the most flagrant examples of overgrazing of public lands to be found in America may be seen at the Grand Canyon National Monument located on the north rim of the canyon midway between Grand Canyon National Park

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ABOUT THE AUTHOR

In our judgment, this statement by Dr. Cottam is one of the most thoughtful contributions to the so-called "wilderness debate" that has been made up to this time. We believe all of our members will want to study it. He denies that we are doing a good job in maintaining the wilderness areas we already have and he suggests that we continue to approach the entire complex field of wilderness maintenance with concepts that may have been adequate in the age of William McKinley but are possibly outmoded in our present age. Dr. Cottam, the author of *Is Utah Sahara Bound?*, is a well-known ecologist and is presently a professor of botany at the University of Utah. His chief interest is range ecology.—Editor

By FRED COPELAND

WILL THE SNOW

T-bars move steadily and low enough for a skier to snatch one, fit it above his pistol pocket, and have it boost him along on his skis up surfaced path of the mountain

THE usual sightseeing tourist groping through the northern mountains in both summer and winter will observe an occasional mountain's face denuded from top to bottom of the always prevailing forest. In a small way the face looks like those spots on the moon. It is a ski layout. And why, the visitor wonders, do the openings have to be so broad, spreading sidewise across a quarter of the mountain's face?

The reason for the broadness of the forest opening is a life-belt. Most non-skiers think of a ski-run as being a straight, narrow snow track down the side of a mountain. It is not so. If it were so, a skier, if he could keep upright, would get to zooming so fast that when he reached the bottom he would take to the air, go over the ski village at the bottom, and carry on into the New Jerusalem.

The great breadth of the ski-run is to prevent this. The skier comes zigzag just as a sailboat tacks to and fro into the wind. From the top of the mountain, where he has been mechanically hauled by a T-bar, rope-tow or chair-lift, the skier comes

For less strenuous work and no risk of broken bones, next time try snowshoes

SHOE JOIN THE SKI?

"Michigan"—14" x 48" "Bear Paw"—14" x 30" "Alaska"—10" x 56"

slicing at an angle as swift as he can stand it, then twists his skies sidewise plowing up the snow as a bulldozer does dirt. This stops him enough so that he can twist his skis on a reverse slant and hence crisscross in sections to the foot of the mountain. Barring miscalculations he won't sit down, for the mountain's denuded face has been shaved of obstacles until a grasshopper would be puzzled to find a hiding spot.

But as a visitor that is only one-half of what you see, and, too, there is a proper place to see both halves safely. Luckily a few of these ski-layouts are right beside a main hard-topped highway.

Let's go to a convenient and comfortable one for sightseeing. It is the Mount Pico layout atop the highway which swings over the main range of the Green Mountains of Vermont, hence eliminates groping into distant although popular ski glens which wind up in a cul-de-sac. This one is on a through highway, and what a through one! Its name is U. S. 4. It plunges westward into America from the Atlantic port of Portsmouth, N. H., sails west to Concord, tacks northwest to 5 miles south of the old Indian school of Dartmouth College, hurries west to the pure and ancient summering village of Woodstock, Vt., and then, shortly, whisks over the summit pass where right beside the hard-top rises the open facade of the Pico ski-layout where later we will get out and venture nearer to a kaleidoscope of color. But right now you might like to learn that No. 4, embellished with many a motor court, snack bar, and even "likker" bars enlivened at one place with a pointing musket for a sign and a shingle lettered, "The Muzzle-loader," carries on through Rutland, Vt., to the old canal town of Whitehall, N. Y., and shortly down the Hudson, and comes to a tuckered out stop one mile north of Greenbush some 5 miles south of Albany. However, it is such an enthusiastic trail inquisitive archaeologists might dig up traces of it across Bermuda and even in Rio de Janeiro.

The skier zigzags down the run, slicing at an angle, then twists his skis sidewise and plows up the snow. This enables him to stop enough to twist skis on a reverse slant

Let's stop at the Mt. Pico ski-layout. Of course for eye-fluttering sights it is best to do so at a holiday week-end in winter. From hard-surfaced No. 4 at this spot a broad parking area runs slightly downward for a city block to the ski village. The entire city block of the parking

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AN APPROACH TA

By A. C. SHAW

Chief Forester
The Champion Paper and Fibre Co.
Hamilton, Ohio

ON January 25, 1957, Senator Humphrey of Minnesota introduced S.840, entitled "A Bill Providing for Price Reporting and Research with Respect to Forest Products." Three other identical bills have been introduced in the Senate and House (S.841, H.R.4122, and H.R. 4560). However, Senator Humphrey appears to be the principal proponent for this type of legislation and I shall deal here with his bill and the arguments which he has made in support of it. The text of S.840 is as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that for the purposes of improving the management and use of forest resources and in order to provide farmers and other owners of small forest properties with current information on markets and prices and to aid them in more efficiently and profitably marketing forest products, the Secretary of Agriculture is hereby authorized and directed to establish a price reporting service for basic forest products, including but not limited to standing timber and cut forest products such as sawlogs and pulpwood.

"SEC. 2. The price reports made by the secretary under Section 1 shall be as to such species, grades, sizes, and other detail, and shall be made at such intervals, but at least quarterly, as he deems appropriate. Such reports shall be by state or forest regions or by such other areas as the secretary considers advisable, and may, in his discretion, be made as to one or more areas in advance of other areas.

"SEC. 3. In connection with the gathering of price information and the dissemination thereof, the secretary is authorized to cooperate with the state foresters or other appropriate state officials or agencies, as well as with private agencies, and under such conditions and terms as he may deem appropriate.

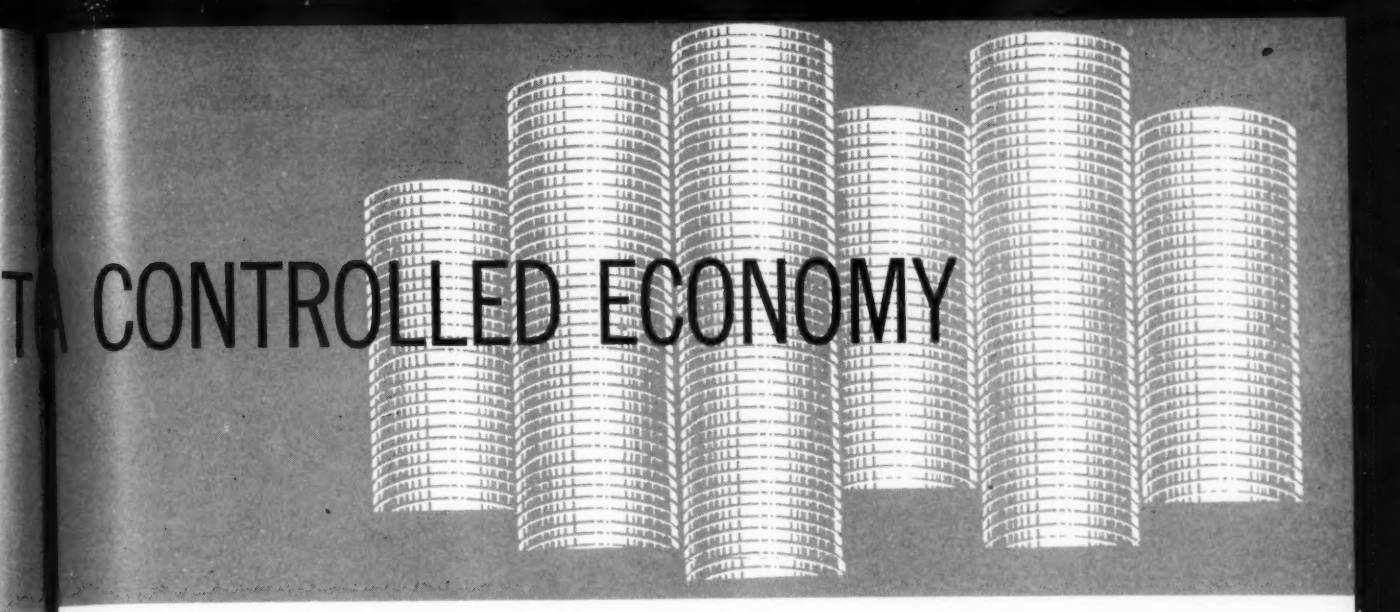
"SEC. 4. In the conduct of research activities under the Act of May 22, 1928, (45 Stat. 699), and the Act of August 14, 1946, title II (60 Stat. 1087), the Secretary of Agriculture is directed to conduct and stimulate research and investigations aimed at developing and demonstrating standards of quality, collecting and disseminating useful market information and developing methods for increasing the efficiency of the marketing and distribution processes for forest products as a means of increasing returns to farmers and other owners of forest properties.

"SEC. 5. The Secretary of Agriculture is authorized to issue such regulations as he deems appropriate in carrying out the provisions of this act.

"SEC. 6. There are hereby authorized to be appropriated for the purposes of this act such sums as may be necessary."

It may be assumed at the outset that the sponsor of this legislation is motivated in good faith with the intention to accomplish a beneficial result through the enactment of such legislation. However, past experience suggests numerous instances wherein a similarly lofty purpose proved to be ill founded or misguided, and there have been instances also wherein the apparent lofty purpose merely camouflaged an undesirable result. For example, there was initially a very high purpose in the attempt to assure adequate food supplies through legislative assistance to the farmer. Nevertheless, the farmer has become the ward of our federal government through legislative fiat, and agriculture may never regain the status of free enterprise.

In these circumstances we must examine carefully any proposal for further infringement by the central government on our cherished system of free enterprise. As it is, industry lives on slender profits in today's economy. While the gross margins of a large enterprise may appear to be ample rewards for invested capital, direct federal taxes cut these by more than half and the burden of direct and indirect taxes constitutes the largest single item in the cost of the product. The owner's dividends are a pittance which is again heavily taxed by the principal recipient of our earnings. The burdens of complex taxes and government controls weigh even more heavily on the smaller business man. Among these harassed entrepreneurs are the forest products operators who are part



and parcel of our industrial complex. It is particularly incumbent on those of us who are members of and have the occasion to be spokesmen for the forest products industries to review and subject to critical analysis any and all measures that may condition our future.

My study of the Humphrey bill, followed by consultation with many others in our industry, has resulted in a strong personal conviction that the measure is not only unsound but is potentially dangerous. I see the enactment of this bill as a long step toward placing the entire forest products industry under the domination of federal administrators. The principal arguments advanced in support of this legislation were made by Senator Humphrey in a statement to the Senate at the time he introduced S.840. His statement appears in the Congressional Record for January 25, 1957, and I shall now review his arguments point by point as I see them.

(1) *More accurate information on forest products prices is needed in order to advance the practice of forestry on small holdings.*

Our Southern pulp and paper industry employs many professional foresters for the purpose of promoting forestry on independent holdings, both small and large. During 1956 members of our Southern Pulpwood Association rendered forestry advice and assistance to 9,806 land owners whose holdings totaled 5,391,000 acres. Of these lands we marked 1,254,000 cords of pulpwood plus a considerable volume of other forest products as well, and supplied these land owners with 52,000,000 seedlings, either free or on a matching basis. An additional 180,000,000 seedlings were planted on lands owned by our member companies. Also, for every owner of merchantable volumes that we were able to help, our members have contacted several owners whose forest inventories were too low to support commercial cutting under acceptable forestry practices. From this extensive experience we have learned that we are able to promote forestry on small holdings only when we can demonstrate to the specific land owner, through precept, example, and business transactions in his own personal case, that forestry with its long term income brings him a higher reward than the larger immediate returns from stand liquidation. We definitely have not uncovered any need for published forest products price statistics, and neither have the experienced and qualified consulting foresters who work in our territory.

The slashing attack on forest products price reporting published on these pages was one of the most widely-discussed papers presented at the recent convention of the Society of American Foresters. The author, A. C. Shaw, does not doubt that the sponsors of the proposed bills are motivated in good faith but he points to the plight of the farmer as an example of a group that was given similar assistance and who has now become a virtual ward of the state. Foresters have no desire to be similarly aided, Mr. Shaw adds.

Public foresters have likewise contributed their efforts in this direction in the South, but they are greatly outnumbered by industrial and consulting foresters with the consequence that their contributors represent a smaller part of the total achievement.

(2) *Department of Agriculture price reporting of nearly every major and minor farm crop has been of inestimable value to farmers.*

Federal price reporting of agricultural products is by no means the only source of information on farm prices. We find by inquiry that regional and local newspapers and radio stations obtain part of their information on agricultural prices from the Department of Agriculture and part of it direct from stockyards and general markets. General markets were developed for the buying, selling, and trading of relatively homogeneous agricultural crops many years ago because such practices were desirable and suitable to the nature of the products. They did not originate by federal mandate.

There is no close parallel between forest products marketing and the marketing of farm crops. There are major markets for only a very limited percentage of any forest product. As far as most forest products are concerned, there are not now, and it is unlikely there will be in the future, any centralized markets for the buying, selling, and trading of them in comparable fashion to commodities such as wheat, cotton, sugar, or cattle. It is quite unlikely that it

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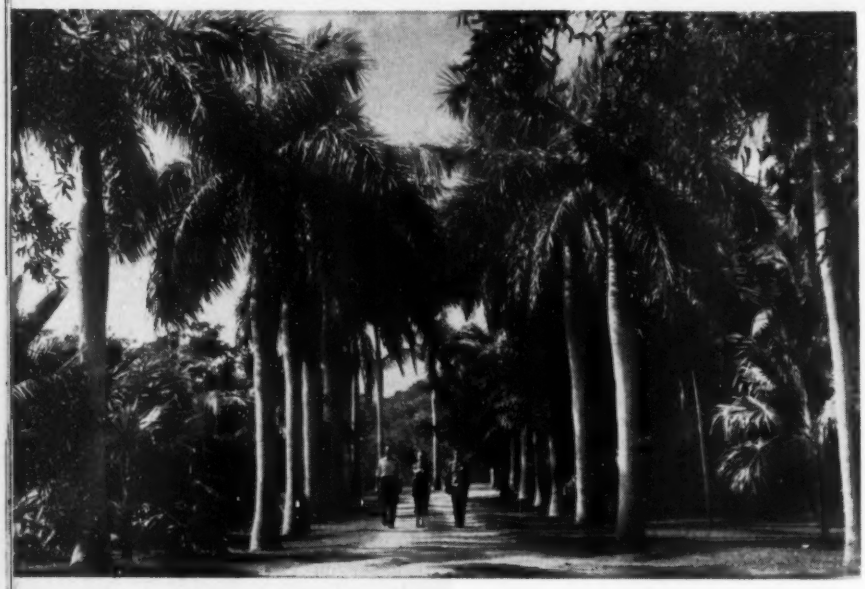
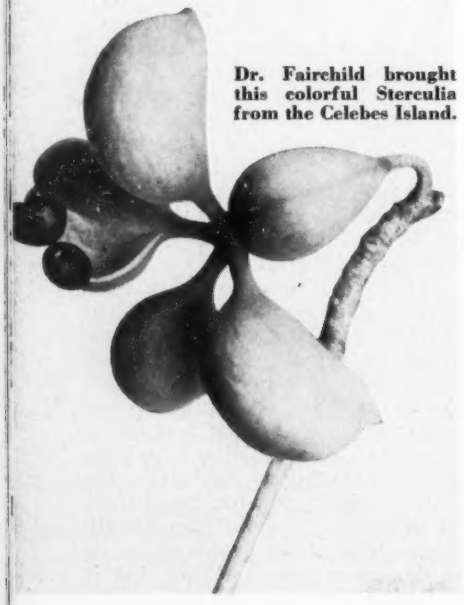
Royal palm is one of few palms native to Florida. Because it grows straight and tall, with no heavy fruit or nuts, it finds favor among the city planners.



A newly planted West Indian shrub will bear flowers resembling Easter lilies.

SUBTROPICAL WONDER



Dr. Fairchild brought this colorful Sterculia from the Celebes Island.

WONDERLAND is a greatly overworked word, and particularly in Florida, a state of many wonders, natural and man-made.

But no other word describes quite as well the Fairchild Tropical Garden, an incredibly beautiful parkland that rises phoenix-like from the mangrove swamps bordering Biscayne Bay, just ten miles south of Miami.

Even before the visitor discovers that this is the largest tropical botanical garden in the United States, with one of the world's most important plantings of palms and rare plants from far off places, he is aware that Fairchild is something a little different in a Florida park or a garden.

Not only is there no admission fee to the grounds, but a large sign at the gate greets the stranger thus: "Please Walk on the Grass. See and Photograph the 83 Acres of Tropical Plants."

However, lest the visitor get the notion that this is Liberty Hall, the sign adds: "Do Not Pick Flowers or Remove Anything From the Grounds. Picnic Lunches, Bathing Suits, Dogs Are *Not* Allowed in the Garden."

For the visitor from the North, unfamiliar with the myriad tropical and sub-tropical trees and other strange foliage of this southernmost tip of the United States, Fairchild Garden offers a most convenient and well organized "indoctrination course," on a self-guided basis. Trees and plants are well marked with weather-proof tags, and maps indicate the location of family and generic groups, and the trails leading to them.

Florida residents themselves come here to settle disputes about "mystery" trees and shrubs in their own gardens, or to gain inspiration from the bold planting arrangements that have attracted the admiration of landscape architects from all over the world.

From this you may deduce, and correctly, that Fairchild Tropical Garden is no jungle, nor topsy-like growth. Nor can it be called, strict-

Horticulturist Adolph Jordahn examines Arenga, or sugar palm, native of Asia.

Coconut palms almost perfectly reflected in lagoon at the gardens. Origin of coconut palm is still a mystery. It grows abundantly in south Florida, but is not a native.

LAND

By E. JOHN LONG

ly speaking, an experimental garden, although many odd trees and flowers are planted here each year on a trial basis. It is associated with the Dade County system of public parks, but most of its support and its plant introductions and other activities, are financed by "The Fairchild Tropical Garden Association," a non-profit organization comprised of private citizens.

While the name of the garden honors the late, great Dr. David Fairchild, famous plant explorer and writer, and while many of the wondrous tropical and sub-tropical specimens he brought to Florida from the ends of the earth grow here, this is *not* Dr. Fairchild's former home nor his personal garden, which lie some two miles to the north, in Coconut Grove.

The basic idea of a well-landscaped collection of exotic palms, vines, shrubs and plants on this site was the brainchild of the late Colonel Robert H. Montgomery, wealthy New Yorker and winter resident of

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Pathologist Theodore Scheffer microscopically examines section of magnolia wood suspected of containing early decay.

Philippine mahogany infected with pocket rot is examined by Dr. Scheffer. Decay indentification is service of laboratory.

By L. W. McBEATH

Forest Products Laboratory, Forest Service
U. S. Department of Agriculture

A GARDEN THAT GROWS

NEW KNOWLEDGE OF WOOD

A ROOM deep inside the U.S. Forest Products Laboratory at Madison, Wisconsin, houses one of the most meticulously cultivated "gardens" in the world.

It is a garden filled with tiny plants that have strange, exotic-sounding names. Though it yields neither vegetables nor flowers nor fruit, a rich harvest is being reaped from it—a harvest of knowledge about how to protect the wood in your home from the ravages of these plants. For their seeds are everywhere, and they're one of wood's worst enemies.

To keep this garden unsullied takes a great deal of fastidious attention and work. But that's only part of the job of the wood pathologists who cultivate it. Their main job is to study these plants, how they grow, what happens to them under different conditions, and what's significant about the way they grow—or don't grow. It's all part of the laboratory's overall assignment, as an agency of the Forest Service, U. S. Department of Agriculture, to improve the usefulness of wood products.

The garden is a tool of scientific research created for the specific purpose of learning more about these plant depredators and how to control their growth on wood. Essentially, it makes possible a speeded-up method of testing the resistance of wood to the attack of these plants—which, despite their imposing botanical titles, are commonly known as decay fungi, or just plain "wood rotters."

"These fungi," says Dr. Ralph M. Lindgren, chief of the laboratory's division of wood preservation, "cause annual losses totaling 300 million dollars in lumber, plywood, timbers, poles, posts, buildings, and other structures.

"Except for damage by insects and

Field stake tests, such as this one maintained by the Madison Laboratory, require years of exposure to get complete data on decay resistance and preservative value.

marine animals," says Dr. Lindgren, "practically all deterioration of wood is caused by these primitive plants. The wood-attacking fungi fall into two broad groups: (1) sap stain and mold fungi that produce disfiguring discolorations but have little effect on strength properties of wood, and (2) wide variety of decay fungi, all of which attack the wood cells and eventually weaken and destroy the wood. Naturally we're most concerned with the kinds that cause decay."

These fungal plants belong to the same botanical family that produces mushrooms for our succulent steaks, yeast for bread, even penicillin mold for life-saving penicillin. And this same family of fungi produces our wines, vinegars, and beer.

If you want to acquaint yourself with these plants when they're in full bloom in their native habitat, take an autumn walk in the woods. If the season has been wet, you're especially likely to find multitudes of these weird-looking plants in full fruit. Their fruits are stark white, sulphur yellow, vivid orange, or mottled gray mushrooms on fallen trees or rotting stumps; encrusted brown sheets, and gray, white, or brown brackets that grow on trunks of dead or dying trees.

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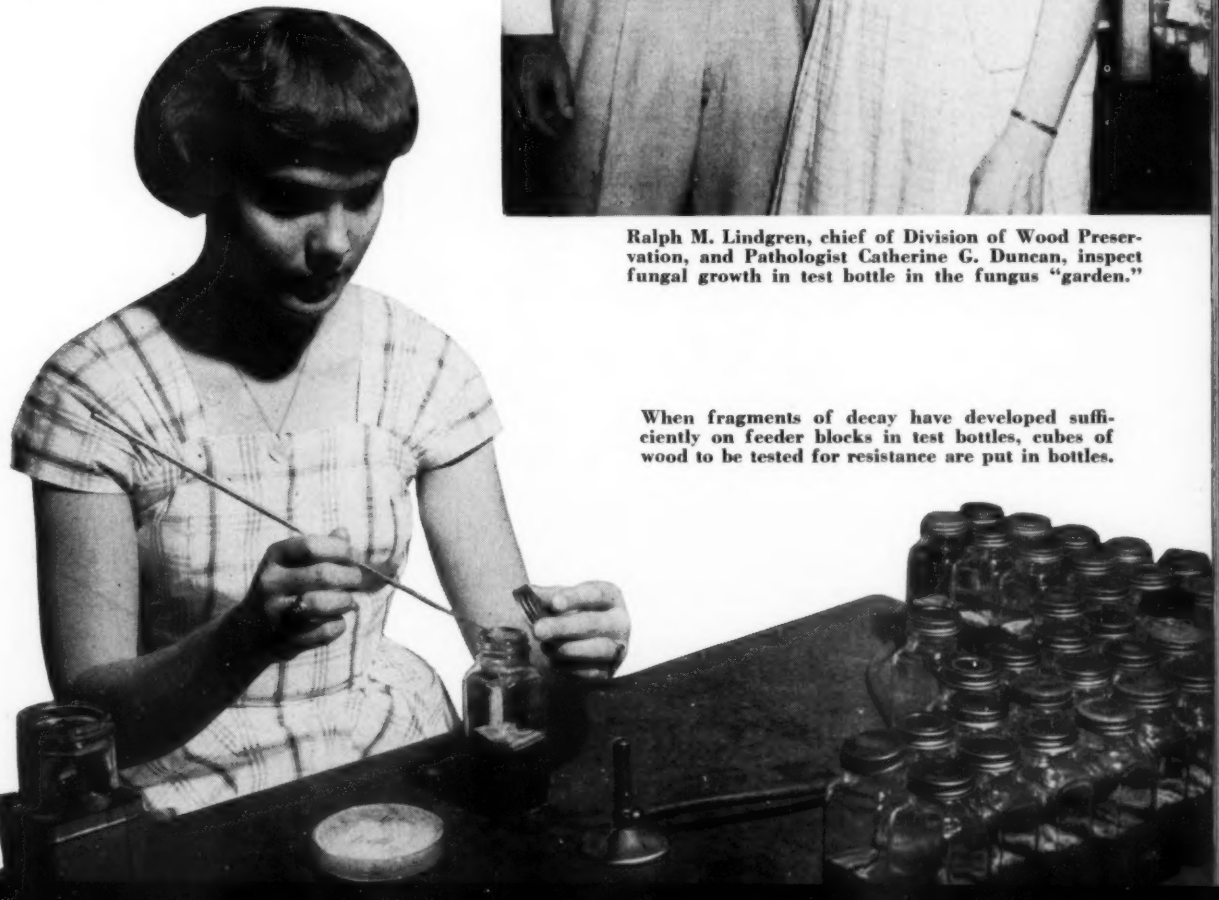
Ralph M. Lindgren, chief of Division of Wood Preservation, and Pathologist Catherine G. Duncan, inspect fungal growth in test bottle in the fungus "garden."



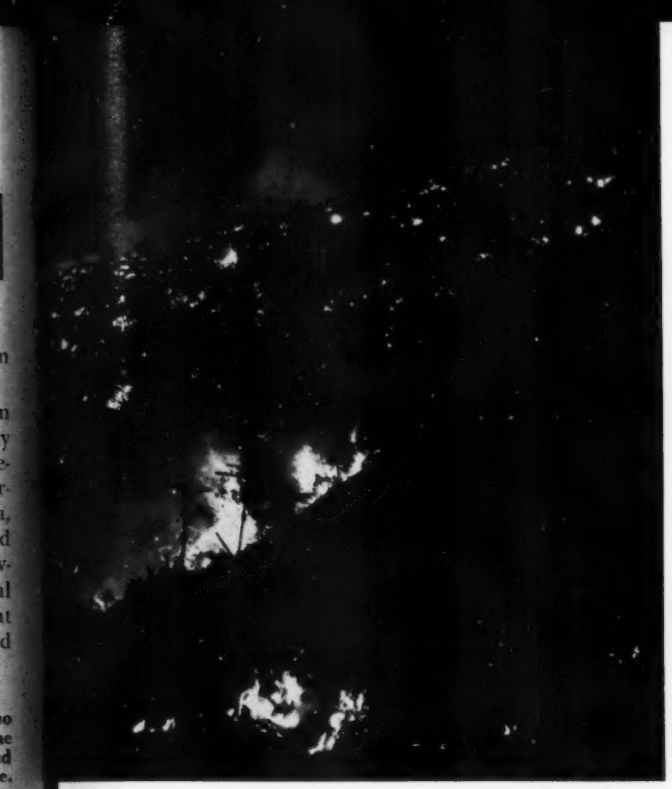
When fragments of decay have developed sufficiently on feeder blocks in test bottles, cubes of wood to be tested for resistance are put in bottles.

BLM'S WORST FIRE SEASON

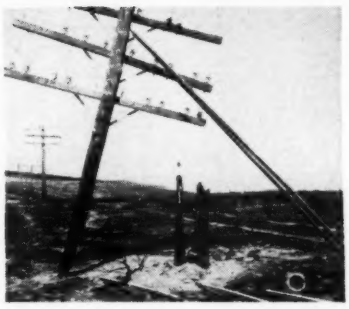
LIGHTNING storms moving up the Kuskokwim and Yukon River Valleys from the Bering Sea ushered in Alaska's worst fire season since the Bureau of Land Management began keeping records in 1940. As the area was suffering a 50-year record drought, these fires rapidly spread through the tinder dry forest, grasslands, and muskeg, burning approximately five million acres of forest lands, wildlife ranges and scattered migratory waterfowl nesting grounds. BLM's fire control and suppression costs for this fire season in Alaska totalled $1,600,000.

BLM suffered serious fire losses in other areas, such as the Cherry Creek fire in Nevada which destroyed 640 acres valuable timberland. Fires near Elko, Nevada blackened 36,000 acres of range and grazing land; and in Idaho, the governor had to call out the national guard to help suppress a fire that had already burned 4000 acres and was threatening the city of Boise.

Left, fire fighters being transported to fire in a helicopter. However, smoke was so thick at some points, planes were grounded. Below, heavy mass of smoke along the Kuskokwim River. In the muskeg areas, fires burned eight feet into the ground and killed nesting migratory waterfowl that refused to leave nests in path of fire.



Night view of the Rocky Canyon fire that reached the outskirts of Boise.

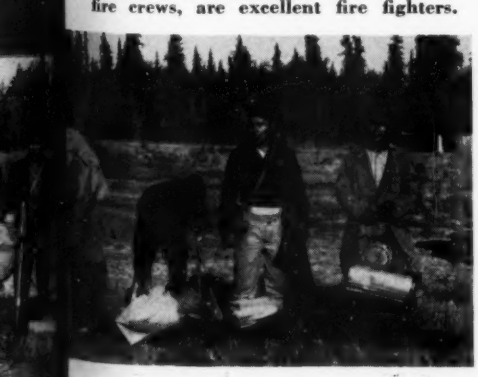


The fire near Boise completely destroyed vegetation, telephone lines.

Shovels are still effective fire tools. However, the fires were so widespread in Idaho, that the national guard had to be called to help suppress them. Acres of valuable rangeland were destroyed.

Much timberland in Nevada, such as this fine stand of yellow pine suffered from disastrous fires. Loss of these stands meant not only loss of timber but recreational areas and wildlife habitat.

The natives in Alaska, both Indian and Eskimo, when organized and trained as fire crews, are excellent fire fighters.

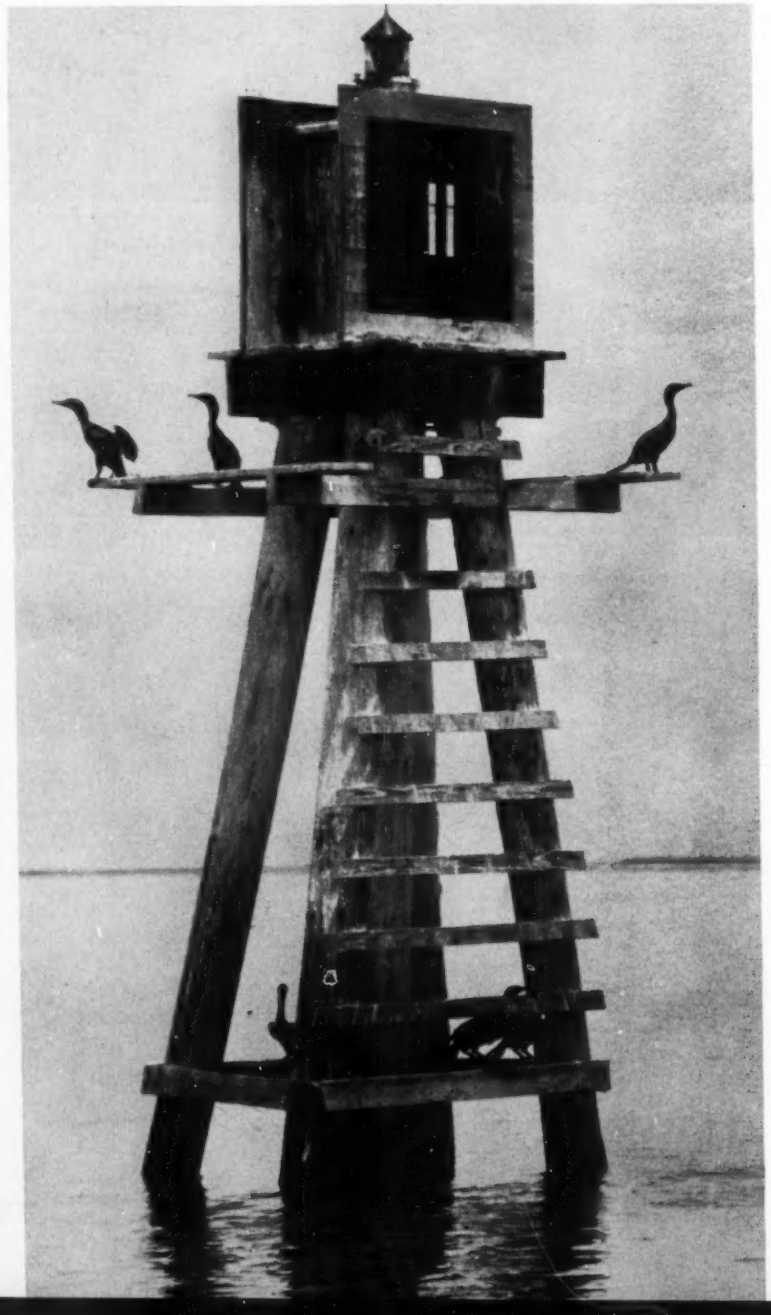


Coast Guard lighthouse and office on Sanibel Island, just off the western coast of Florida

ISLAND WILDLIFE REFUGE

By CLEVELAND VAN DRESSER

Some cormorants are perched on a channel marker



IT is not unusual for the shores of islands off Florida to be carpeted with seashells. Some of these islands, when accessible from the mainland, are sought by human beings who erect dwellings upon them. It is also not uncommon for numerous islands off both coasts of Florida to support waterbirds of various species.

But when you find an island which excells in all three departments, then you have a piece of land that is extremely rare. Such an island actually exists. It is known as Sanibel Island, and is located in the Gulf of Mexico a few miles off the mainland from the charming little south Florida city of Ft. Myers.

Sanibel is known the world over as a prolific producer of some of the most rare and lovely seashells to be found anywhere on the face of the globe. Collectors come thousands of miles just to roam its beaches to add to their collection—and a collector

Snowy egret is one of the species that has found Sanibel a haven for nesting

Glossy ibis on Sanibel, which supports a full-fledged refuge

Green heron in a red mangrove and buttonwood thicket on a Key between Big Pine Key and Big Torch Key

of seashells is among the most enthusiastic of hobbyists. In addition, Sanibel, by reason of a most efficient ferry service, has become a mecca for individuals who wish to spend their leisure hours in an atmosphere of peace and quiet, as far removed as possible from the lavish layouts that are usually labeled "tourist attractions."

Furthermore, Sanibel not only supports a heavy population of waterbirds, it actually maintains a full-fledged federal wildlife refuge. An island that is only three miles wide and nine miles long which annually draws thousands of tourists to its famed beaches and also has residents of its own, would hardly be the place for a wildlife refuge. Ordinarily wildlife doesn't get along with human activity too well. The average federal wildlife refuge is sparsely populated, the idea being the fewer humans, the better off the birds and animals will be. Wildlife generally prefer to conduct their affairs with a minimum of outside interference.

Reddish egret plays in the surf of the Gulf of Mexico where the island is located

Brown pelicans also enjoy this refuge, where bird life is truly astonishing

However, Sanibel, to a great degree, refutes that generally accepted theory, for the bird life on the island is truly astonishing. It is a haven for nesting herons, egrets, anhingas (water turkeys), pelican, ibises and ospreys. During the nesting season, its several rookeries are a bedlam of activity as the birds go about the business of raising families.

Sanibel is also playing an important role in the saving of the rare and gorgeous roseate spoonbill, once threatened with extinction. As a matter of fact, Sanibel is considered by Audubonites as one of the main attractions of southern Florida. A visit to the island is a "must" according to members of the various Audubon Clubs throughout the state.

The teaming wildlife population of Sanibel is given a terrific boost during the winter months by the arrival of thousands of migratory waterfowl from the north. Mallards, bluebills and other ducks, as well as coots and gallinules, literally swarm to the island from November to March.

There are no game wardens on Sanibel, for none is needed. The residents of the island take a fierce pride in their wildlife neighbors, and swift retribution awaits the individual who has the temerity to do any shooting.

Sanibel got its start as a federal wildlife refuge through the activities of one of the greatest conservationists of all time. J. N. (Ding) Darling,

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YESTERDAY'S VACATIONS

The styles in traveling conveyances and dress may change, but not the scenic beauty of our national forests and parks which has been attracting millions of visitors for many, many years

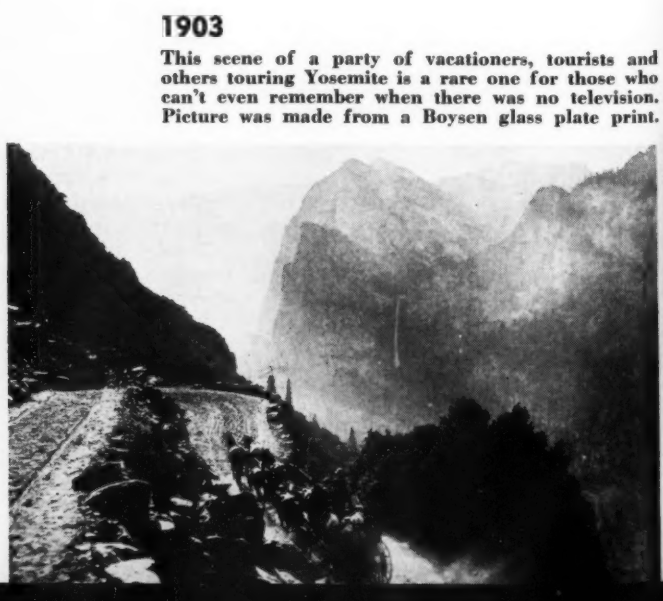
Photographs by the U. S. Forest Service

1898

A stagecoach ride in Yosemite National Park was a fine way to see the great outdoors. This photograph was made from an original glass plate taken in 1898.

1903

This scene of a party of vacationers, tourists and others touring Yosemite is a rare one for those who can't even remember when there was no television. Picture was made from a Boysen glass plate print.



1919 There is a natural law which insists that everything that goes up must come down. This 1919 Ford, poised on the eastern crest of Teton Pass, and has obviously come up, appears to be considering that forthcoming 8,249-foot drop in less than 25 miles.

1919

This family is appropriately dressed for park-visiting in 1919; black stockings and wide-brimmed hats for the girls, ankle-length dress for mother, and sturdy work shirt and pants for dad.

1920

Popular touring car of 1920, might be termed an old time "soft top" as compared with our current open-air hard-top convertibles. This scene is the Middle St. Vrain Canyon, Roosevelt National Forest, Colorado.

1932

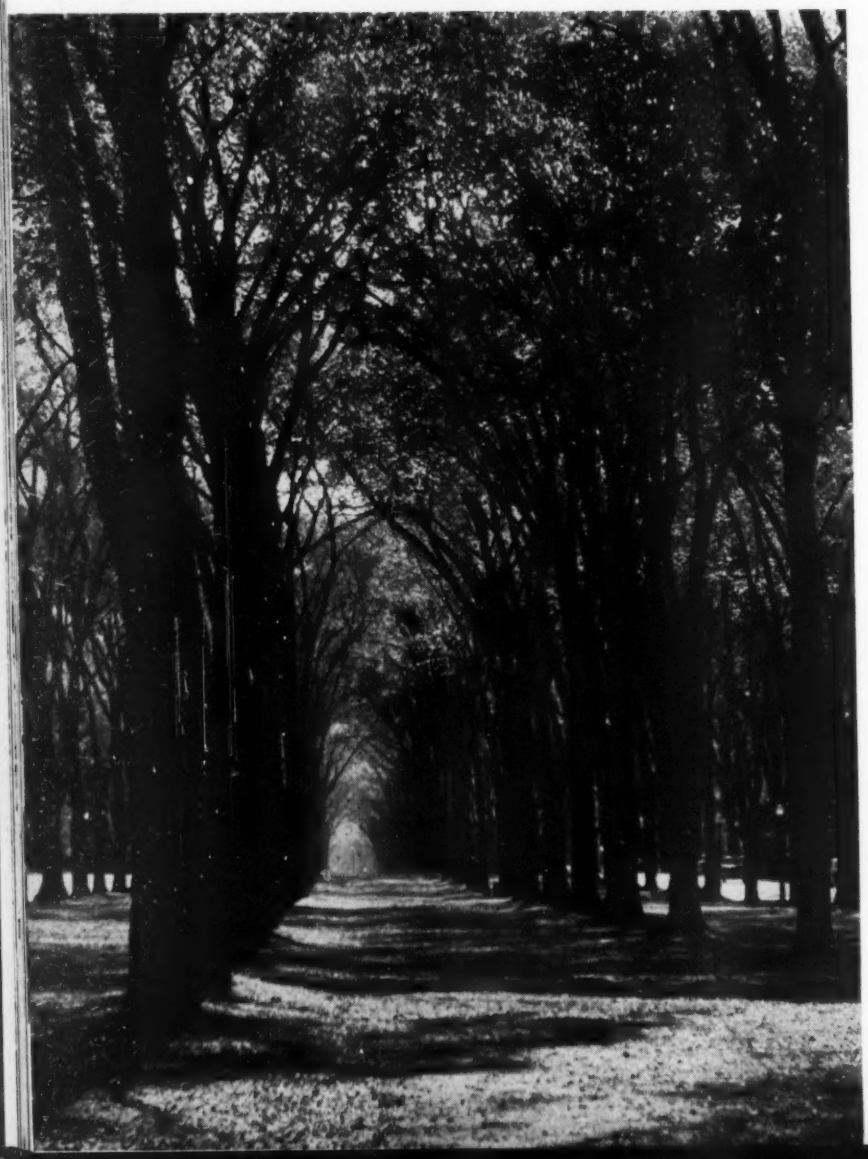
This is probably a familiar scene to many *American Forests* readers, as it is a fairly recent photograph, being taken in 1932 on the Wasatch National Forest in Utah. Mountains in the background are Bald Peak and Reed Peak, respectively.

By GORDON S. SMITH

BUFFALO—CITY OF T

A modern home in ideal surroundings. Numerous trees were left to preserve the natural beauty.

One of the many avenues lined by six rows of trees. The aisle in center is used as a bridle path.



EVERY city has two faces. Buffalo is no exception. Driving in from the south, along the shore of Lake Erie, one enters an industrial haze that sends a traveler back on his heels. But once through this barrier a visitor soon discovers another face.

From atop the City Hall, on a summer's day, the view looking in a northern arc is peculiar to this city of 650,000 people. At first sight there is no city. Then, here and there, through small gaps and spaces between the trees, a church spire protrudes or the roof of a college building shows. Behind this vast expanse of green—a green that knows no boundary as it disappears into lighter hues to the horizon—is a large community.

Less than 200 years ago this was virgin forest. About 150 years ago the civilized seed of this inland port took root—it grew within a forest. But, like all cities, if there is no public spirit, planning and labor, they grow with bricks, and mortar, and macadam. The citizens of Buffalo, apparently, worked zealously to preserve and permeate this beauty of 200 years ago.

Buffalo had, prior to 1870, an abundance of the beauty of grass and foliage in its tree lined streets and well kept private grounds. It had two of the three functions of a park system; ventilation and adornment. But of the third, healthy recreation for the public, it had none.

In 1858, William Dorsheimer, afterwards lieutenant governor of the state of New York, invited a handful of public spirited gentlemen to shape the future park system. They held their first meeting on August 25, 1858.

At private expense, they engaged Mr. Frederick Law Olmsted, architect-in-chief of Central Park, New York. His firm, Olmsted, Vaux & Co., recommended a system from The Front, on Niagara River, to high ground in the north-east. After many years of discussion the report was submitted to the mayor on No-

TREES

vember 16th, 1868, and it was met with public favor.

In April 1869 it was passed by an act of the Legislature.

Within one month, Buffalo appointed twelve members to the Board of Park Commissioners and set in motion the issue of bonds up to $500,000 and the selection of land up to 500 acres.

Without going into too much detail it is interesting to note that the first report to the Common Council, January 1871, listed the purchase of lands to the sum of $247,785 at an average of $600 per acre. Also, at the end of the following year, one lake was constructed and 40,000 trees, shrubs and vines planted.

In later years, difficulties were met and appropriations cut, but the plans did creep along.

There seemed to be one big omission to a complete system, however, and that existed in south Buffalo. Olmstead was again consulted. In 1887 he drew up extended and elaborate plans, so much so they were reluctantly shelved because of high

(*Turn to page* 65)

Bald Cypress, usually associated with southern states, here frame the Historical Society's building.

Malicious damage to trees is rare. Only a few of the smooth barked trees show any signs of defacing.

Modern tree-trimming methods, such as hydraulic lift, are a must to keep ahead of Nature's schedules.

Lovely Delaware Park provides a tranquil setting for the Albright Art Gallery, which is seen in the background.

"TD-24 power-on-both-tracks steering *makes the big difference* ...in road work and yarding"

—S and F Lumber Company, Arcata, California

"With power-on-both-tracks steering, the TD-24 dozer walks along through rock where other bulldozing equipment just nibbles," reports Jesse Forrester, for S and F Lumber Company, Arcata, California.

"Live power steering on both tracks pays off in yarding, too. The TD-24 can climb steeper slopes and come out with bigger turns of logs than other tractors.

"We get high production in rough country at very low cost with both of our International TD-24's."

"Dead-track drag" is eliminated!

Loggers all over the northwest report that the International TD-24 crawler solves their road-building and log-yarding problems. Their reason: Planet Power steering eliminates the load-limiting "dead-track drag" of conventional steering-clutch crawlers on the turns! Planet Power steering enables the TD-24 to pull the same big loads on turns or straight-aways! And, by feeding full-time "live" power to both tracks, you turn as sharply or gradually as desired—keeping the blade fully loaded, uphill or down.

To "bull" through the real tough spots, the TD-24 gives you exclusive, stall-preventing, Hi-Lo shifting—to change speeds on-the-go, without stopping or declutching!

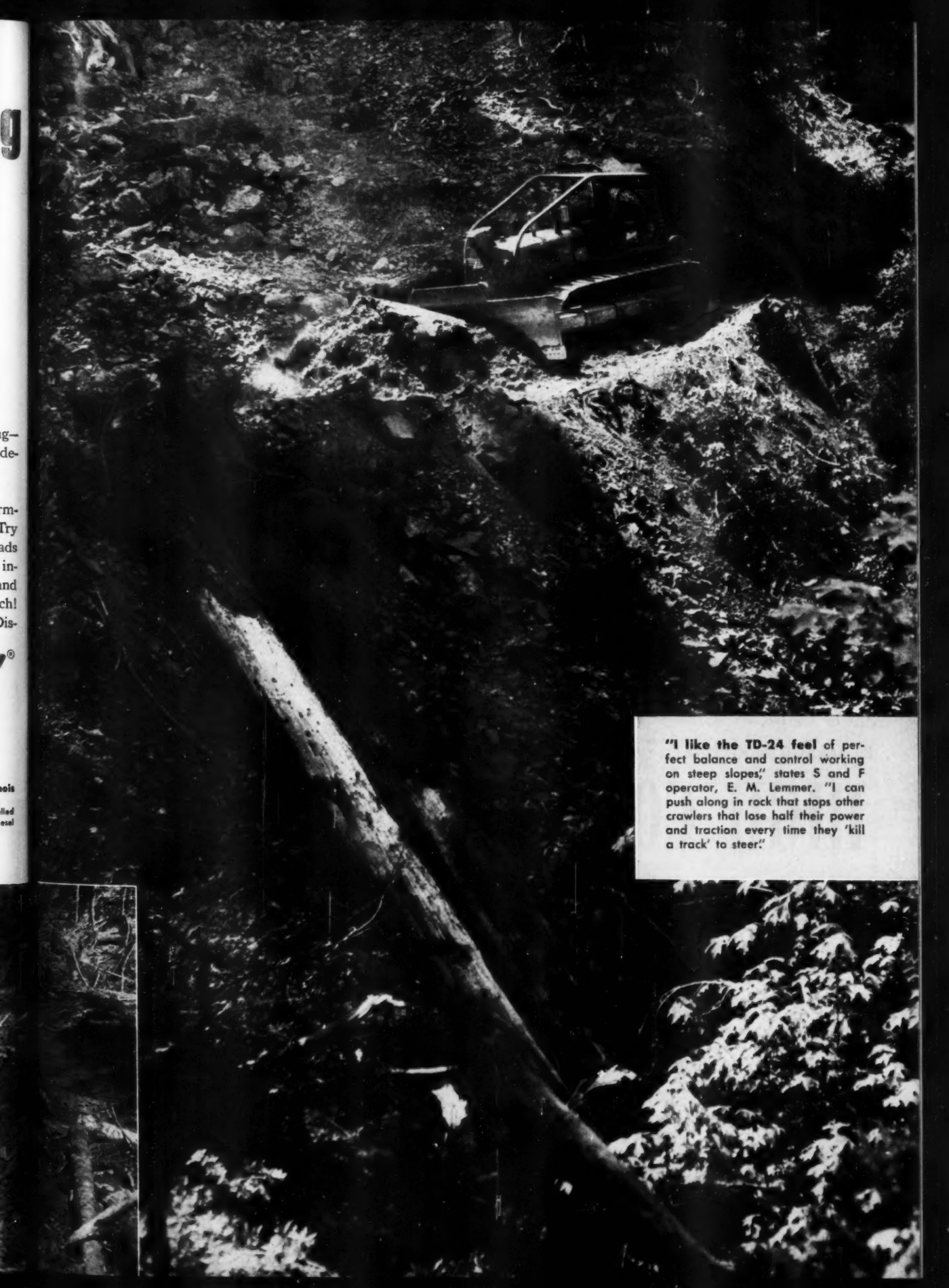
Prove the whale of a difference in TD-24 performance, compared to any other king-sized crawler. Try Planet Power steering and Hi-Lo shifting for big loads in adverse conditions. Prove the convenience of instant "cold weather" gasoline conversion starting, and the economy of long-life Cerametallic engine clutch! See your International Construction Equipment Distributor for a demonstration!

International® Construction Equipment

International Harvester Co., 180 N. Michigan Avenue, Chicago 1, Illinois

A COMPLETE POWER PACKAGE: Crawler and Wheel Tractors . . . Self-Propelled Scrapers . . . Crawler and Rubber-Tired Loaders . . . Off-Highway Haulers . . . Diesel and Carbureted Engines . . . Motor Trucks . . . Farm Tractors and Equipment.

"The TD-24 works steeper grades and brings out bigger loads of logs," says Charles Shriner, operator of S and F's newer TD-24. "I can work the TD-24 on grades where other rigs can't go even with their blades raised. This means high log production at the landing, even in roughest woods."



"I like the TD-24 feel of perfect balance and control working on steep slopes," states S and F operator, E. M. Lemmer. "I can push along in rock that stops other crawlers that lose half their power and traction every time they 'kill a track' to steer."

Drawing by James Fisher

By MARGATE KIENAST

HIGH COST OF GETTING LOST

WE kindle at the idea of rescue, of bringing out survivors of a B-25 impaled on a mountain peak, carrying serum to a snow bound child, packing a man with a broken back out of trackless wilderness.

But there is another kind of kindling connected with rescue work. It might be described as a slow burn on the part of men who work in the woods, folks who live near the wilderness and people who own expensive equipment which can be pressed into service in emergency. In recreation areas all these people and facilities are called upon, time and time again, to function heroically for darn poor reasons.

Just what is the price of rescue imposed when careless people stray and jeopardize their own lives and the lives of others? Can we really put a price tag on the boy stuck on a cliff, the child strayed from a picnic because his parents were not watching, the teen-agers off on stunt-climbing a mountain that experts wouldn't approach without climbing equipment and direction finders. What of the woman taking a stroll entranced by a woodland flower; the hunter, fisherman and uranium prospector blind to distance and direction because he is intent upon booty?

Summer after summer, winter after winter, these careless ones lose themselves. It takes time, technique and money to bring them back, not always alive.

This burden falls upon public agencies like the U. S. Forest Service, the National Park Service, Uncle Sam's Military installations; upon police, fire departments and upon John Citizen who happens to live near the trouble spots.

In summer the ranger could use all his daylight hours managing camping areas, estimating timber

sales, reforesting denuded areas, improving watersheds, trails and roads. But because the forest is open to public use he has to ride herd on campers, fishermen, hikers, botanists, photographers and babies, and bring in the strays. When the call comes, night or day, he must go and press into service all help available.

The local merchant feels a moral obligation to leave his shop, the small industry to close down, the police force to lend every effort, so that together they may beat the underbrush, comb the mountain, dredge the lake and river, or walk dozens of miles to reach a stroller from an accessible side.

The man they bring in is a culprit, an offender against society, even if pity is aroused at the shape he is in.

Young mountaineers on Mt. Hood knew their climb should not have been undertaken in the season they chose. They walked knowingly into the bright face of danger. Fatigued by the climb, dazed by a storm, they turned the wrong way to plunge down the great precipice of the North Ledge. They died, but their shattered bodies had to be brought in under unimaginable difficulties.

A University of California professor, collecting floral specimens, suddenly realized he was close to "Finger Jack" a peak he had always wanted to climb. Climber and botanist may inhabit the same body, but mountain climbing and flower-picking equipment differ. Teacher went part way up, turned back, took the wrong fork in a trail descent. By noon he was completely lost in the timber. He wandered around until dark; he built a fire but it did not send up much smoke. Then he built a bigger one, which he thought might be seen from a fire lookout tower. It was, but the fire was soon out of control and the professor had to run for his life. In his dash he stumbled over an old road that led him out of the woods, into safety. Only five forest acres were burned because a fire crew arrived promptly, but it still took a crew, fire fighting machines, and a tidy total of man hours to write off the professor's walk.

There are examples of carelessness, nevertheless, tha' wring the heart. Little Kathie, Cousin Steve and Mary Anne near Rhinelander, Wisconsin, wandered thinly clad into the forest one Saturday afternoon. They were tagging along after a tame porcupine. Suddenly a blizzard hit. Snow drifts up to four feet hampered the searching parties. Despite the fact that 700 men were pressed into service to look for them and they were found but one mile from home in an abandoned summer camp, it was too late. Two of the children were dead and small Kathie lost parts of her frozen feet.

A hiker left the Piper Trail Camps in the New Hampshire White Mountains with six other people. At the top of the mountain he handed his lunch to the other hikers. "I don't need it," he told them. "I'm going down."

His party returned but he didn't come in. At 7:30 that night his friends went miles up the mountain calling him. Two remained planning to shout all night while the other called in the forest ranger. The first thing he did was to bring in the shouters before they, too, got lost. These things can run into a chain reaction. At seven the next morning the ranger sounded the alarm in nearby Conway. Just then the hiker strolled in saying he had left the trail "To follow a brook which might lead to a river, which might lead to a lake. I like to walk around lakes."

The ranger read the riot act. Rangers seldom gnash their teeth in public. They quietly explain the rules, go home and write their resignations, which they tear up next day because they *like* to work in the woods *if the public will let them.*

A college girl and her boy friend decided to climb the face of Mt. Katahdin. They chose to do it without ropes or climbing equipment. Halfway up the girl slipped and landed on a ledge.

It took Baxter State Park personnel, loggers from the Great Northern Paper Company, the forest ranger, the fire department of a nearby town, officers of the State Department of Recreation, men from the Public Service Company, part of the stock of the local hardware store including ropes and portable searchlights, and a brace of ski instructors to lower ropes and haul milady to safety. One night and a day were required to get her safely back to the base of the mountain. The cost included loss of a day's pay for many volunteers on leave from their jobs, and for all ripped clothing and wrecked boots. The girl had to be hand-carried out all the way.

Five boys in the Jemez Mountains, 50 miles north of Albuquerque, decided to climb one afternoon to the top of a Mesa that seemed directly overhead in the narrow San Diego canyon. Four of the boys followed a trail, while the more daring, Warner Jones, picked his route up the sheer canyon wall.

At five in the afternoon the boys called the ranger to the scene. Warner was stuck, couldn't move in any direction. He was 100 feet up on a small ledge. He couldn't even sit down. He had taken off his shoes in the heat of the day and now, in late afternoon, was chilled.

The ranger put on his climbers, went up a white fir directly across from the boy. By this time it was dark. Flashlights held from below lighted the spot as the ranger, from a distance of 30 feet, tossed a length of twine to the boy. After repeated tries Warner caught the twine and dropped an end to the ground. A rope was tied to it and sent up to him. By looping it over a rock which jutted out near the ledge the exhausted boy shakily climbed down. "I'll stay away from anything bigger

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Reprinted from *Nature Magazine* for August-September, 1957

Outdoor Advertising and Public Relations

An Editorial

In September, 1956, The Union Oil Company of California, which serves the states of Arizona, California, Idaho, Montana, Nevada, New Mexico, Oregon, Utah and Washington, cancelled all use of billboard advertising. The result of this action has been a twenty percent increase in patronage and a widespread expression of public approval.

"Two factors were of primary concern to the company in reaching the decision to abandon this type of advertising," say the company's official announcement. "First was the traffic hazard which a great many experts have indicated billboards tend to increase. Second is an apparent and growing resentment on the part of many people and residential communities to obscuring our natural beauties with this type of advertising.

"As a company serving the motoring needs of a general public, it did not make good sense for us to continue to use an advertising method which was apparently becoming offensive to many of our customers and prospects and which, in the opinion of some experts, represented a hazard to them."

In the light of this action, and the nationwide publicity that has resulted from Senate hearings on federal legislation to restrict outdoor advertising along the 41,000 miles of the $33 billion Interstate Highway System to be built during the next decade, those interested in protecting the highways from outdoor advertising invasion have sounded out the attitude of the largest users of outdoor advertising space. It has been called to the attention of those advertisers that seventy-five percent of the new highways will go through new and as yet unspoiled territory, and that the limited-access design of the highways excludes all other business use of the roadsides.

In view of this it has been suggested that these advertisers might well review their advertising in the light of good public relations, and in recognition of the distaste of the large majority of Americans for such roadside defacement. This sentiment is demonstrated in the findings of a recent Trendex poll, which showed that two out of three Americans are definitely opposed to rural outdoor advertising. Business executives have been urged to express their thinking in this matter.

While outdoor advertising users reveal no general tendency to jump on the Union Oil Company's bandwagon, they do indicate appreciable recognition of the sentiment against misplaced outdoor advertising. A good many executives insist that their billboard messages are confined to commercial and industrial areas, thus revealing a concern for the rural highway environment. Many of them extol the outdoor advertising medium as beneficial to the "health of the American economy," which, it seems, is supposed to cover a multitude of sins. Others parrot the outdoor advertising industry's line that "regulations should be on a state and local level," an argument always advanced because the industry knows from long experience that it is easiest to thwart regulations at these levels. A few even indulge in encomium for the "beauty" of the billboard.

The president of Outdoor Advertising, Inc., the trade organization of the standardized outdoor advertising medium, reacted to any opposition to outdoor advertising by providing two most interesting sentences:

"I wonder if you will agree that freedom to communicate is basic to our society, and that freedom of speech—freedom to be heard—also implies freedom to be seen. The right to communicate visually in the outdoor area—in good taste and within the law—would seem to be one of our essential freedoms."

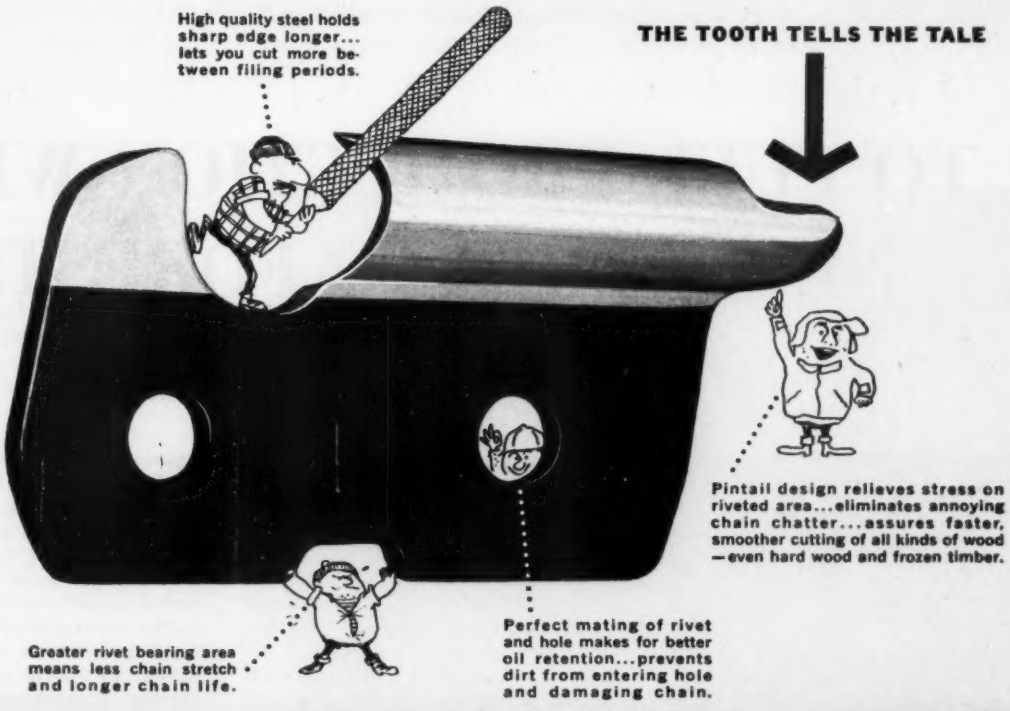
This syllogism attempts to postulate a new freedom—the freedom to intrude. It also arrogates to "good taste" a universal definiteness that O.A. does not, unfortunately, possess. And it is easy to remain within the law when you control that law!

The outdoor advertising medium, the industry contends, is subject to regulations in all of the states. In fact, such regulations vary from the infinitesimal to the too little at the state level, and from nothing at all to occasional good zoning at the local level. The outdoor advertising industry asserts that it, as a legitimate business, is entitled to participate along with other businesses in areas which have been zoned for business, commercial, or industrial purposes.

So far as the system of interstate highways is concerned, these are limited access highways, with all business excluded except from the vicinity of points of ingress and egress and roads feeding such interchanges. Thus the outdoor advertiser is seeking a unique privilege; is asking for an exclusive place on the environs of the new highways. It is not a question of the control of outdoor advertising but the control of the use of the highway, which includes its immediate environment. Are the outdoor advertising people, then, entitled to special consideration?

The answer to that is simple. When the "Outdoor Advertising Medium" actually and specifically confines its operations to areas which have been zoned for business, commercial or industrial purposes there will be some realistic basis for resolving the conflict between the industry and those concerned with roadside protection.

Such sounding of sentiment among advertisers and the outdoor advertising industry serves to strengthen our conviction that the only protection to the public, which is investing its billions in the new highway system, lies in federal control of the parasitic growth of outdoor advertising along these highways.


High quality steel holds sharp edge longer... lets you cut more between filing periods.
THE TOOTH TELLS THE TALE
Pintail design relieves stress on riveted area...eliminates annoying chain chatter...assures faster, smoother cutting of all kinds of wood —even hard wood and frozen timber.
Perfect mating of rivet and hole makes for better oil retention...prevents dirt from entering hole and damaging chain.
Greater rivet bearing area means less chain stretch and longer chain life.

Try the all-new saw chain that's taking the country by storm...

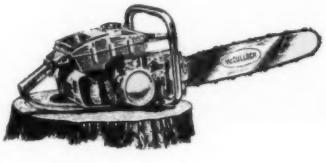
"Greatest chain development in 10 years"

Here's the unique all-purpose saw chain that loggers have called the "greatest chain development in 10 years"—the *all-new* McCulloch Pintail.

Grueling field tests under all cutting conditions prove the Pintail cuts faster, lasts up to 50 per cent longer than ordinary chain.

No matter what size or model *McCulloch saw you are now using, it will pay you to replace your worn chain with McCulloch's exclusive Pintail.

* Can be used on many other makes, too.



Try the lightest, most powerful gear-drive saw of all... McCulloch's New Super 55.

Just 22 lb light, the 6.5 hp Super 55 is the choice of professional loggers everywhere. Factory equipped with Pintail chain at no additional cost.

McCULLOCH

McCulloch Motors Corporation
Los Angeles 45, California

Divisions:
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McCulloch Co. of Canada, Ltd., Toronto, Ont.

5-7101

TO FULL PRODUCTION WITH NEW ENGLAND FORESTS

By JOHN T. HEMENWAY

A sign of sound forest management.

FOR many years Harris A. Reynolds had pondered the question of how best to bring individual private forest holdings under applied management in order to achieve full production. He had worked for over thirty years with the Massachusetts Forest and Park Association for forest conservation through public acquisition of national, state, and town forests, protection against fire and tree pests, equitable taxation, and public education; but his chief concern in 1942 was that the big problem of placing small private woodlands (about 60% of the total forest area in New England) under forest management still remained unsolved.

The next year, the association appointed a committee, composed of leaders in wood-using industries, landowners, conservationists, and foresters, to make a study of the best means of coping with the problem of bringing this tremendous area into full timber production. This committee agreed that what the owner needed most was a reliable private agency to relieve him of all details of management. The final recommendation was the creation of a foundation to give complete forestry service at cost. In 1944, the New England Forestry Foundation was incorporated, with Mr. Reynolds as its first secretary.

The foundation is managed by a membership of not more than 50

Clear cutting has robbed the owner of his forest capital. The land will contribute little or nothing to the community for two generations.

"The most difficult problem in forest conservation is how to bring the small holding under forest management" — Harris A. Reynolds

residents of New England, and vacancies are filled by the members themselves, so that the organization is self-perpetuating. It is non-profit. Therefore, no one receives dividends from earnings. Profits, if any, must be put into the extension of the foundation's services. The basic purpose is to provide practical, on-the-ground assistance, at cost, to owners in the management of their woodlands.

Many owners have an idea that forestry does not pay. The foundation demonstrates that their forests can and will pay, and that the cost of services is more than justified by the higher prices received through competitive bidding for standing timber. In addition, the woodlands of our clients are improved in species composition, in stocking, and in vigor. This results in faster growth of more valuable timber for planned periodic cuttings, upon which the wood-using industries are dependent.

Since these industries give direct employment to almost 10% of the New England industrial force, this is a matter of real economic importance. Even now, the annual lumber consumption in New England is over two billion board feet, while only about half of this amount is actually grown in the region. Under full management, New England could more than meet this demand for sawtimber.

The foundation operates through Forest Management Centers under the supervision of trained foresters. Each center is a small business in itself, and the running of it calls for as much business and public relations ability on the part of the resident forester as the knowledge of forestry itself. Once a center is established, its permanence is assured, for if the forester in charge is unable to carry on the work, he is replaced by another consultant. The foundation intends to have several qualified men in training at all times. At present, there are thirteen centers throughout New England—two in Massachusetts, two in Maine, five in New Hampshire, and four in Vermont.

As a first step, both the landowner and the forester sign a work order setting forth what is to be done and

Supervised cutting in Monadnock Center, New Hampshire, where the owner is assured of a regular income and local industries can depend on a steady supply of timber.

what it will cost. No work is started without this authorization, and no additional work undertaken without the client's permission.

Next, the forester makes a woodland examination report, or in the case of a large area, a forest management plan. The woodland examination includes a description of the area, the quantity and quality of the timber, the recommended cut, and other work which may be needed to bring the forest to full production. The management plan is based on an intensive survey, and includes an inventory of the merchantable species (keyed to a forest type map). It also includes the present value of the product, an estimate of the current annual growth, the amount of timber which should be removed at the first cut, the interval and volume of future cuttings, and the expected increase in annual growth after cutting. Recommendations are made to bring the forest to maximum production and to protect the growth from fire, insects, and disease.

When marked timber was first offered for sale, operators were reluctant to submit bids. They contended that such cutting was impracticable, and that they could not persuade choppers to cut in that manner. Gradually, one operator after another tried it, and they found that the forester is not an "unreasonable, theoretical fellow" with whom to work. Some operators say now that they can make as much, or more, money by cutting marked timber, where the average log diameter is larger, than on a competitive basis, and it is only the occasional marginal lot that must be handled by negotiated sale. Many operators request that their names be put on our mailing list, and several operators are hiring our foresters to mark timber on their own lands. The foundation has proved one important point in the management of the small woodlot; that is, the forester must be placed in a position of authority, where his decision, as to WHAT, WHEN, AND HOW the timber is to be cut, is final.

Thus, the client has been served from the consultation, through the examination and plan, the marking of the timber, the putting it up for bid, the writing of the agreement of sale, the collection of the money, to the supervision of the cutting operation to see that all specifications of the agreement are carried out. In other words, the landowner has been given COMPLETE FORESTRY SERVICE.

Many private estates with large holdings were closed to operators in the past for fear of destructive cutting. This has also been true of watersheds and some areas devoted to the protection of wildlife. Much of the timber on these areas has now been released through the foundation's method of cutting and supervision. Now, in accordance with the cutting interval set up for such tracts, there will be a regular flow of timber from most of these lands. Already, a second cut has been made on the property of several early clients.

Much work has been done for Water Boards and Town Forest Committees. One town forest, which is also set aside for a watershed, contains 3,000 acres, and the management plan showed that while the primary purpose of the forest was water protection, it had an annual growth of 75,000 board feet plus some pulpwood. Under management it was pointed out that this forest would eventually bring an annual income to the town of $1,200. Plans for other areas of this nature indicate that by selective cutting, watersheds can be protected, and at the same time, annual incomes of substantial figures can be obtained.

Recently, a forest management plan was made for a 750-acre watershed, which supports a stand of nearly two million board feet of timber. A cut of 412,000 board feet is now being made under the most careful supervision with the approval of the State Department of Health. Thus, the town receives income, while the water supply is protected, and a sufficient stand is left for future growth.

A forest management plan was made a few years ago for a 425-acre town forest in Massachusetts. At the time of the survey it contained 956,000 board feet of timber, valued at $10,995. A sale of 157,750 feet for $4,180 was made. The total forest growth per year was then $380, but our forester estimated that this would increase to $450 in ten years, and to $540, during the second decade. This illustrates that a properly managed town forest is not only a recreational and aesthetic asset to a town but also a source of steady income.

The foundation is managing forests on many private estates, where owners are more concerned with aesthetic than financial values. In the early days of the foundation, a cut of a million board feet was made on an estate in New Hampshire where the owners were previously unwilling to harvest their overripe timber because of the fear of destructive cutting. By this selective cut, and later the salvage of blowdowns, the forest has produced a substantial income to the owners, while its beauty and vigor have been preserved.

On a game preserve of some 20,000 acres, the foundation is continuously supervising the harvesting of timber. Income is provided, and the annual cutting not only releases young conifers for game cover, but provides winter browse for the elk and deer from the tops of the trees cut and young sprouts for summer feeding. Here is a demonstration of good game management and good forestry going hand in hand.

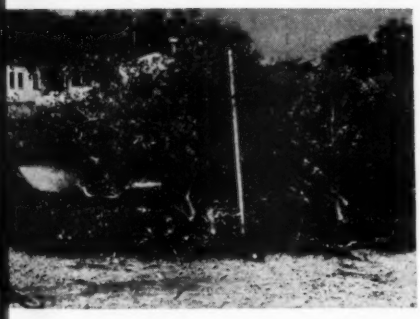
Dr. Charles Eliot, late president of Harvard University, once said that a forest was one of the most practical of all memorials because it is self-perpetuating and self-supporting. The foundation, realizing the importance of owning forests of its own, was particularly fortunate in 1945 in being offered 600 acres in the town of Sharon, New Hampshire. This oldest of our memorial forests is an excellent example of good land management, as each part of the forest is put to its highest land-use. Most of the land supports timber, but one area is leased for a summer camp, and another 25 acres is rented for a professional grower of blueberries. The foundation's income from this forest has totaled about $6,500 since 1945. Most of this has come from eight small timber and plywood sales from different parts of the forest. Expenses on the other hand have totaled only about $2,700, which leaves a credit balance of around $3,800. The first expenses incurred were for a survey and the examination of the title, and each year there have been local real estate tax, services of the foresters in supervising cutting, and in improvement work and road repair.

The foundation owns eight forests in three states, totaling 1,700 acres. Since a permanent record of activities is maintained on all demonstration forests, we can pass on an interesting story to the landowner of how much income he can expect from his woodland and how he can improve the quality and speed the growth of his timber. In addition, these gifts are particularly valuable to the foundation because they provide a backlog for remunerative forest improvement work for our foresters during slack times and a regular income is received from sched-

FIREBRAKE®... *new chemical for fighting forest fires... now available!*

Better than water... better than any other chemical for retarding forest fires ...that's new FIREBRAKE! Never before has the forestry man had such an effective weapon for battling fires in timberlands and wild, remote areas.

FIREBRAKE is immediately effective, and is ideally suitable for application by air tankers and ground spray units. FIREBRAKE adheres to brush and trees; confines fire to untreated areas. (See the photos of a demonstration below.)



1. Fuel for a test is shown being treated with new FIREBRAKE fire retardant to left of stake marker. It will be dry before testing begins. The other half of fuel pile will remain untreated.

2. Now you see fire blazing in the *untreated* fuel. A stiff wind is fanning the flames directly onto the portion treated with new FIREBRAKE fire retardant. This is a test of utmost severity which quickly determines whether protection is real.

3. FIREBRAKE wins victory over fire and intense heat. Charred remains of the untreated fuel stop abruptly at FIREBRAKE line. Photographic proof of the effective protection by FIREBRAKE.

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**Published data also available:*

(A) Technical Paper No. 15—March 15, 1957
California Forest & Range Experiment Station
Forest Service, U. S. Department of Agriculture

(B) FIREBRAKE Technical Bulletin FB-1
prepared by U.S. Borax & Chemical Corporation

United States Borax & Chemical Corporation

Pacific Coast Borax Company Division • Agricultural Sales Department

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uled selective cutting. The Board of Directors has established a policy of placing half of the income from timber sales from these forests in the Permanent Fund as a reserve for future expenses, particularly for stand improvement. In order to assure the continued success of this program, the foundation's policy is to accept only gifts of land which are self-supporting from the beginning. The foundation does not ask special favors, such as relief from taxes from the towns in which its demonstration forests are located, but it takes its place in the community the same as any other forest owner. We do not intend to make these areas show places, for the policy is to manage them as practical forests where the foundation will conduct those activities which will prove to any forest owner that under good management such lands can be made to produce a steady income. These tracts are not for research in management but for practical application of the established principles of silviculture from the dollars' and cents' standpoint and for the demonstration of good land-use management. The foundation is now able to care for these memorial forests in perpetuity.

The New England Forestry Foundation is definitely not the work of conservationists alone. It is a cooperative effort being sponsored by owners, operators, manufacturers, and consumers to demonstrate that forest management is economically sound. It has now become a permanent organization, bringing modern forest management to owners, contributing to the forest economy of the region by helping to increase wood production, and proving that the average woodlot can and will pay. This is a tribute to the foresight of Harris A. Reynolds, the founder of the New England Forestry Foundation.

Reading About Resources

(*From page* 6)

in fact perhaps never be won; yet the solid progress that has been made is due in large measure, he makes clear, to the intelligent devotion of this one great public servant.

Water is a third major conservation area. Flood and navigation control are problems as old as the nation itself. The crisis in water supply is more recent, arising first in western irrigation demands, and come now to plague both industry and municipal engineers in the metropolitan centers of both coasts. Responsibilities here rest in large part with the Army's elite Corps of Engineers, whose political evolution Coyle has summarized with succinct detachment.

Aside from such brilliant water control projects as TVA, less has been accomplished here than in either forestry or soil conservation, perhaps because the water problem had no Pinchot or Bennett. "Twenty years from now," Colye warns us, "with another fifty million people in the country . . . we can expect a real strain on the household water supplies . . ." That is one of the author's understatements. And not only will this strain be in quantity, but in quality as well. "Along parts of the Ohio, at low-water stages of the river, about one-quarter of the flow has come out of sewers higher up." Anyone who has sailed on the Potomac below Washington knows what this means.

Conservation is wise and proper utilization. When T.R.'s Country Life Commission reported in 1908 that the living standard of U.S. farm life had made little progress in two hundred years, it was apparent that the country's rich resource base was being utilized neither wisely nor well. Coyle makes it clear that cheap, far-ranging public power was a large part of the answer. Whatever our views may be toward public power in 1958, the facts are clear that REA lifted the levels of rural life, and hence fed the entire national prosperity, in a time when no other approach could have worked so quickly.

"The technical and political changes of half a century have led to the present state of rural electrification," Coyle observes, "but only after unremitting pressure by men who were determined to bring the resources of electricity to the farms and the crossroads." Morris Llewellyn Cooke was the foremost of these men, earning a seat beside Pinchot and Bennett.

"The conservation principal of using publicly owned resources to benefit the people made possible an achievement that was held to be impossible from the narrowly commercial point of view." This is not a propagandist's argument for an economic dogma; it is simply a recounting of the truth.

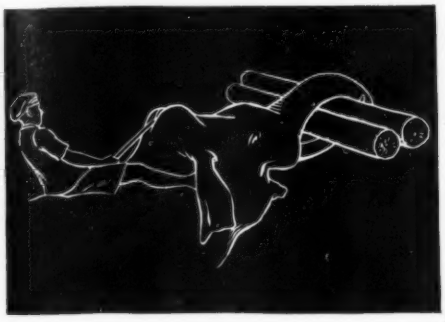
At this point Coyle begins a rapid survey of the less spectacular but scarcely less important conservation advances of fifty years in fuels, minerals and metals, and wildlife—pursuit of the latter in hunting and fishing has, he notes, become far and away the most popular U.S. sport, and hence big business itself. Finally, after a quick but perceptive glimpse into the world's resources, he sums up his report, concluding with a last good sentence: "The conflicts over conservation throughout its successful growth in the past fifty years have been parts of the necessary struggle to bring our civilization into its best array so that it may effectively offer the world prosperity and peace."

Conservation has a political, and to a lesser extent economic perspective. It is the work of a student of human affairs, not a student of specific conservation technology. As a review of the public life of the conservation movement, it has no peer. There are omissions, such as the small watershed program — there is no mention of the Muskingum Watershed Conservancy District or the Brandywine Valley Association —and no mention of the flamboyant but effective ministries of the late Louis Bromfield. Obviously *Conservation* cannot be the last book on this exciting half-century of struggle to preserve America's bounty, but it is the best we have thus far.

NEW AND IMPORTANT

David Cushman Coyle began his book with references to the young Pinchot. Hans Huth, Curator of Research at the Art Institute of Chicago, concludes his monumental study, *Nature and the American* (University of California Press. 1957. 250 pp. $7.50), with a look at the same man. What they see are two Pinchots.

The reason is clear enough. *Nature and the American* is a fascinating *tour de force* of the aesthetic, cultural and social courtship between a young nation's people and its land. In this romantic, sometimes sentimental, and deeply "recreational" context, Pinchot appears as the brusk and powerful exponent of a new realism in man's attitude toward nature which could explain



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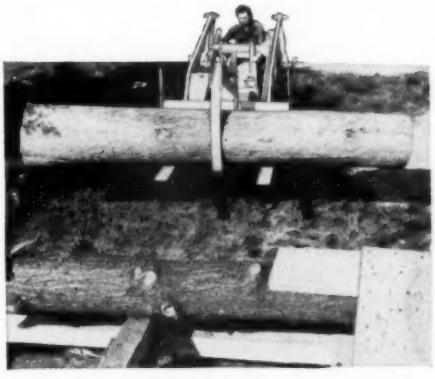

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itself only in dollars and cents, in technological progress.

Conservation, on the other hand, being the thorough account of Pinchot's heroic efforts to organize and effect the preservation of our economic resources, casts him in the more sympathetic role of public crusader.

The books are wholely unlike. Huth's *Nature and the American* should, of course, be read first. It begins with the early colonists facing a forbiding, limitless wilderness. It unfolds through three hundred years to the time when there is no wilderness remaining, except those bits and pieces which must be defended at every political turn. Here you discover the astonishing depth of the relationship between the American people and the natural world they inhabit.

This is major Americana. This is the chronicle of those many men who, having found the "natural" land, took it upon themselves to lead the people out of their dismal cities to God's spaces — and when they could not do this, there were such people as William Cullen Bryant and Frederick Law Olmsted to bring space to the cities, in magnificantly conceived public parks.

Huth ranges across every facet of his subject. You, the reader, are witness to the gradual emergence to respectability of those "dissolute" sports, hunting and fishing, which the Puritans so fervently opposed. You are present at the birth of the watering spas, the canal trips, the beach resorts, the habit of vacationing—and more than this, Huth explains *why* these customs developed, and why many of them went into decline.

Great organizations such as the Audubon Society, vast programs such as the development of the National Parks System, cannot simply spring into being through the interest of a handful of devotees. Behind the fight to save the whooping crane is a profound national tradition, the same tradition which has forced Congressional acceptance of the Park Service's "Mission 66." In order to understand this tradition, *Nature and the American* is an essential book.

Soil, the 1957 Yearbook of Agriculture (Edited by Alfred Stefferud. The U.S. Government Printing Office. 1957. 784 pp. $2.25.)

Alfred Stefferud has done as much as any living American to provide agriculturalists of every stripe, farmer and county agent, scientist and backyard gardener, with a wealth of lucid, accurate, up-to-the-minute information on the many phases of agricultural production. *Soil* may be his best editorial job yet. Certainly it will rank with *Trees,* the 1949 Yearbook, in the extent of its usefulness and service to us all. These books are like calendars, to be referred to often in order to stay up to date.

Litter — Our $100,000,000 Disgrace

(*From page* 17)

every part of the country. Another 50 public interest groups and federal bureaus serve on its advisory council.

The spearhead of KAB's program is education of the public. Recalling the role of education in reducing TB and forest fires, its directors feel that similar methods will be successful here. The public must be educated (although the Lord knows why) to feel pride in the beauty of countryside and city and to understand that it is littering its own property and then spending its own money to clean up after itself. Each citizen must be brought to the realization that he, as an individual, must be responsible for his own small share. The anti-litter filler you may have heard recently on radio or TV may have come from one of the thousands of special kits sent broadcasters by KAB. The greatest attention is given to promoting the use of trash bags in autos. Trash bag information is available through their monthly news letter and in "how to do it" kits. Highly important is KAB's efforts to stimulate and help more communities in setting up their own local programs. It is largely through these groups that the litterbug and potential litterbug is being reached.

The means of attack are varied and come from a score of public interest groups and governmental organizations. Oil companies distribute hundreds of thousands of trash bags and provide trash receptacles for customers' use. One company instructs its attendants to ask its patrons if they have trash they would like disposed of. In Rochester, Girl Scouts delivered 5-minute pep talks in the public schools, prepared items for local papers, made poster displays and urged cookie bakers to put anti-litter slogans on Girl Scout cookie boxes. The General Federation of Women's Clubs this year will put emphasis on a trash receptacle program designed to place containers in "every vulnerable spot."

Litter-interested committees have analyzed their city's worst trash problems by means of litter maps showing location and varying degrees of mess. The worst spots are given top priority for clean up. The National Commission on Safety Education is integrating litter prevention in driver education courses at the high-school level. Several states include litter questions on tests for driver's licenses. Workshops and conventions have helped educate many persons to further the gospel of "Cleanliness is next to Godliness." Churches have taken up the fight on a morality basis. Both major political parties had "Keep America Beautiful" clauses in their 1956 platforms, and in Indianapolis, precinct workers carried the litter prevention message from house to house. As the crescendo grew to a higher and higher pitch, even Gallup Poll became interested last year and found that 86% of the people questioned were sick of the litter mess in this country. A deviation from this figure was noted in California recently when it was found that only about 70% of the city fathers in the state and only 30% of the citizenry were interested in instigating local anti-litter campaigns!

As Americans became more and more delinquent in civic habits, state after state enacted anti-litter laws and now more than forty states have such statutes on their books. Other states are hoping to follow suit at an early date. Where the law is enforced, it has been a better litter deterrent than requests, pleas and mild admonitions. Penalties range all the way from $5.00 to $1000 with $100 being the most frequently used maximum. Signs posted along the highways inform travelers of the law. Unfortunately, nearly ¾ of the states make no attempt to issue citations to offending citizens except for those caught purposely dumping quantities of trash along the road-

side. Three states—Delaware, Maine and South Carolina—have been feeling their way cautiously on arrests, making 37, 75 and 58 respectively in 1955. California made the best showing that year with about 1000 arrests and about twice that number of warnings. The states may well look with shame upon their meager records of arrests when noting New York City's 122,028 summonses and $438,038 in fines in one year's time. Arizona, California and a few other states have jail clauses in their anti-litter laws permitting sentences in lieu of or in addition to the prescribed fines. In New Hampshire, littering hunters and fishermen may be fined up to $50 and then lose their hunting and fishing licenses to boot. Despite the laxity of litter law enforcement, officials of most states felt that increased arrests with plenty of newspaper publicity would greatly reduce the incidence of littering.

In California there have been several instances where convicted offenders have been given the alternative of serving jail sentences or cleaning up litter along sections of the highway. Cleaning up trash seems to make a good impression.

In the state parks the litter problem is an old one that is simply tolerated in many states. Minnesota, no longer willing to tolerate littering and vandalism in their parks, in 1953 passed the Minnesota State Park Sticker Act, which required each car entering a state park to have a sticker costing $1.00 affixed to the lower right hand corner of the windshield. The purchase of the ticket identifies the visitor more closely with his state park which engenders a greater respect for its beauty, cleanliness and facilities. Mr. U. W. Hella, director of the Division of State Parks states that since the institution of this act, littering and vandalism have dropped noticeably.

One of the most galling effects of litter and vandalism to park and highway administrators is the cost of clean up and repair. Yearly the national bill becomes higher. Although accurate figures are difficult to obtain, present estimates of litter clean up alone indicate that we may be shelling out of our bank accounts in excess of $100,000,000 a year to clean up our own filth!

The question of whether or not we are winning the fight against litter is a tough one to answer because while some states have made noticeable gains, others have made none. Through a strenuous campaign, Ohio reduced its litter clean up bill by 45% between 1953 and 1955. Reports from the state of Washington indicate a 20%-30% reduction in trash clean up by means of an educational program without arrests. On the other hand, Oklahoma's costs have increased by 55% during the 1953-55 period and in 1956 their costs were more than double the 1953 figure of $233,000. Oklahoma has no anti-litter law. Until reliable figures are made available from every possible source in the country, we cannot know on a national basis if we are really making gains. But the present partial record is enough to show us that we can be victorious if campaigns of intensity equal to those of Ohio and Washington are put into effect.

The job of regaining our national pride is not for one small group to pursue by itself, it's everybody's job. Led by the small group, schools, churches, civic organizations of every sort, sportsmen's clubs, families, and individuals can help others in a multitude of ways to do a small share for the beauty of city and countryside.

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Forestry In FAO

(*From page* 13)

require a longer article than this one to describe them. Some concept of the organization's scope of work may be obtained, however, if one thinks of it as a world-wide forestry extension service with related responsibilities in technical education and research.

An interesting example of FAO's activity in these fields is a proposed seminar and study group of perhaps 50 senior technicians who would be sent in 1958 to the United States for eight weeks by their governments to study watershed management techniques. The project would be jointly sponsored by the Agriculture and Forestry Divisions.

The Technical Panels

The Technical Committees of which forestry is one—the others are agriculture, fisheries, information, and nutrition—are advisory in nature. That is to say, the committees reviewed FAO's work in each technical field since the last previous conference, and examined proposed programs for 1958-1959. When specific fields were of interest to two committees, they held joint meetings, as was the case when the subjects of seeds and watershed management occasioned combined conferences by the panels on agriculture and on forestry.

All discussions are multilingual, in English, French, and Spanish. Simultaneous interpretation is carried on so that there are no delays in the proceedings. Despite the technical nature of much of the terminology, one knew at every point of the discussion exactly what was being said.

A reasonably close analogy to the procedure followed by a technical panel would be a meeting of the Board of Directors of The American Forestry Association or of the Council of the Society of American Foresters, the major difference being that there are 40 persons present talking in three languages. To this reporter, a salient feature of the conference was the *esprit de corps* that developed among the foresters, all the more remarkable considering the diversity of nationalities, education, race, geography, and points of view.

On many issues, but not all, the foresters from Latin America, the U.S., the Scandinavian countries, and Germany saw eye-to-eye. On others, particularly the controversial Mediterranean Development Project, the foresters from the Mediterranean nations and the Near East were generally in agreement.

Dr. McArdle's chairmanship of the committee meetings was conducted with celerity, courtesy, and dispatch. At the conclusion of the sessions, he was warmly thanked for his services. In passing, it might be remarked that his well-known sense of humor intervened to resolve an occasional impassé.

Results Accomplished

It would require the length of a small book to mention, much less describe, all the topics considered. Many of them, while of great importance, were strictly of a routine nature; that is, they had to do with the continuing day-to-day-work of the Forestry Division. For example, after careful study of the whole program, the conference was agreed that Director-General B. R. Sen (India) was to be commended for his emphasis on the many-sided inter-relationships between agriculture and forestry, and for his insistance on ways by which forestry should contribute to the well-being and incomes of rural populations and forest workers.

The work of the regional forestry commissions, of which there are four, was reviewed and commended. These commissions are currently active in Europe, the Near East, the Asia-Pacific area, and Latin America. Attached to these commissions are working parties that are engaged in afforestation and reforestation, and torrent control and avalanches in Europe; research in the Near East; research in silviculture, forest management, and forest products in the Asia-Pacific region; and research in Latin America. In Europe is a subcommission working on cork-oak, eucalyptus, and planting techniques.

The conference asked the Director-General to consider a regional training center in aerial survey techniques in the Far East, and supported a continuation of FAO's analytical studies in timber trends.

Mediterranean Project

One of the most controversial proposals, of interest not alone to the forestry committee but to the whole conference, was the Director-General's Mediterranean Development Project. This in effect is planned as a comprehensive regional program of social and economic development for the nations of the Mediterranean basin, particularly those of the eastern portion.

Among other things, the proposal provides for reforestation, watershed protection, and related forestry activities. But this is not all. Extensive economic and social development not confined to agriculture, fisheries, and forestry is contemplated.

Of this phase of the plan many persons have reservations as going outside the scope of FAO's authorized functions. Moreover, some representatives questioned the propriety of FAO undertaking to do for nations on a regional basis what they should, with FAO's technical assistance, do for themselves.

There was no disagreement as to the importance of reforestation in this part of the world, and of the relation of tree planting to pasture improvement, soil stabilization, and watershed protection. The disagreement centered around the possibility, because of the regional nature of the problems, of a centralized imposed form of development by FAO, rather than decentralized development by the individual nations participating, with technical advice and service from FAO.

World Forestry Congress

The fifth World Forestry Congress, scheduled to be held in Seattle, Washington, during the period August 29-September 16, 1960, came in for considerable discussion. Although no central theme was adopted, the program will feature multiple-use forestry. Thus, in addition to forest management, there will be papers and discussion of range management, wildlife management, forest recreation, watershed management, and related subjects, including tropical forestry.

Organized tours to various forest operations in the Pacific Northwest will be featured. Foresters from other nations specifically requested that tours be arranged to forest products laboratories, and to the Southwestern states to observe arid-land management.

While it is admittedly too early

to anticipate the number of foresters from abroad who may be in attendance, plans will be necessary to accommodate 300 foreign foresters as well as the same number from the U.S.

Preliminary plans call for the designation of a general chairman by the State Department, and the formation early in 1958 of an organizing committee broadly representative of all forestry interests in America.

Previous Congresses were held in Rome in 1926, in Budapest in 1936, in Helsinki in 1949, and in India in 1956. This fifth Congress will be the first ever to be held in the Western Hemisphere, and will provide an opportunity for America to show the world the progress forestry can make, on public and on private lands, under democracy and capitalism. Future announcements of plans will be published in *American Forests.*

An Approach to a Controlled Economy

(*From page* 23)

will ever be economical to centralize the collection, sale, and distribution of major quantities of forest products at a few points in order either to market them or to establish price structures. Forest products in the rough are consumer goods only to a limited degree from a marketing standpoint, as compared with farm crops.

By the way, before we leave this subject, it seems pertinent to remark that price knowledge has not resulted in uniformly good agricultural practices throughout the country. While soil abuse has been reduced, the twenty odd years of heavy agricultural subsidies and technical assistance have failed to accomplish uniformly good agricultural practices.

(3) *Forest owners have no reliable independent source of information as to the price of forest products.*

Nothing could be farther from the truth. The timberland owner has many sources of information and it is our experience that he makes good use of them and is well informed of current prices. The banker, the businessmen who deal with farmers, the agricultural agents, and forest products operators are all familiar with and can usually quote the range of local stumpage and rough, partly processed forest products prices for the surrounding area. In busy forest products areas there are numbers of experienced and competent and re-

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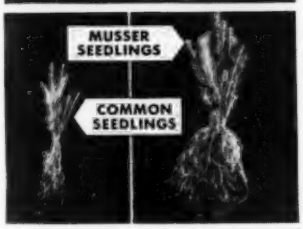

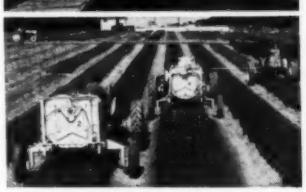

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1-58

liable consulting foresters who possess current market information. In addition, there are many industrial foresters who have gained the confidence and respect of forest owners and consequently they, too, possess such information.

The U. S. Forest Service itself sells several billion feet of stumpage annually and information concerning stumpage prices which it has received is public knowledge. Competition is the rule and not the exception in marketing forest products. Non-competitive selling of wood is a very minor part of the whole marketing picture in this field. True enough, one cannot sit in an office in a distant city and offer sound advice on either a forest or forest products values. This will continue to be the case regardless of the data and statistics at hand.

(4) *Forest products economy is not a free one since a few large buyers have the reliable marketing data and use it to outbargain small sellers.*

As pointed out before, every forest products owner and operator has ready access to the current data and information pertaining to his area. The forest products industry is not comprised of a few large buyers but, on the contrary, involves a host of small ones.

The forest products market is the antithesis of the major agricultural crop markets where prices and volumes are regulated by the federal government which has attempted (and largely failed) to measure demand and supply.

(5) *The federal government can cure these evils by conducting research in the forest products business, establishing grading rules, collecting price data, and circulating information to forest land owners.*

The federal government is now selling several billion feet of forest products annually. It has market price data on all forest products as determined by its own appraisals and by its sales of huge quantities of timber in every forest region of the United States. The price received by the government for its forest products, comprising a substantial portion of the total of all forest products, should be fairly representative of what the private land owner can expect to receive for like products. If price information is all that is needed, the federal agencies already have volumes of it. This information is not confined to stumpage alone. The Forest Service presently has file information on probably as much as 20% to 30% of the

rough forest products produced in this country annually.

As to the establishment of grading rules, such rules are merely rough guides whether they are log grade rules for determining the probable lumber grade yields or lumber grade rules for the governing of lumber transactions. Regardless of the type of rule, only trained and experienced men can apply them. Many log grading rules have been developed by the Forest Service and a few by scaling bureaus and others. Only a few are widely regarded. Usually, such rules are developed on the basis of a study of a very limited production of lumber. This cannot be otherwise. Thus, such rules reflect only the competence and practice of a specimen mill over a few days or weeks and also the lumber grading and marketing practices of that time. They, of course, can give no weight to the fact that a product can be sold on grade alone only when there is sufficient production of any of the higher grades to render the separation of many items worthwhile. Furthermore, in order for grading rules to be influentially applicable, there also must be a market for the graded items.

The federal government is not now, never has been, and never will be equipped to conduct research for the purpose of advising the individual business as to how its operations might best be performed. Any industrial enterprise is able to continue in existence only if it is able to create and maintain a profitable margin between costs and sales.

(6) *Parity prices for forest products should eventually be determined, but there is at present inadequate data to determine these parity prices.*

At the outset I questioned the basic concept of extending federal intervention into the area of forest products. I have pointed out earlier that a large segment of agriculture has become the ward of government and the government, through unsound practices, has worsened rather than bettered the economic position of agriculture. But leaving that aside for the moment, one wonders what would constitute adequate data to determine parity prices. Price trends and relationships for forest products are discussed in House Document No. 195 of the 85th Congress, First Session; on page 11 of that publication a chart reveals that national forests stumpage prices for Southern pine varied from $24 to $52 in 1952, from $20 to $48 in 1953, and from

(Cornus) Pink Flowering Dogwood

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3 to 4 feet	35.00	300.00
4 to 5 feet	45.00	400.00

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18 to 24 inch, s.	3.50	30.00

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Castanea, Chinese Chestnut, Blight Resistant

2 to 3 feet	6.00	50.00

Cercis, Red Bud

	per 10	per 100
4 to 5 feet	7.50	65.00

Double Red Flowering Peach

3 to 4 feet	7.50	60.00
4 to 5 feet	9.00	80.00

Gleditzia, Honeylocust, Thornless

2 to 3 feet	5.00	40.00

Fraxinus, Green Ash

3 to 4 feet	3.00	25.00

Juglans, Black Walnut

4 to 5 feet	5.00	40.00

Liriodendron—Tulip Poplar

4 to 5 feet	7.50	60.00
5 to 6 feet	9.00	80.00

Nyssa—Block or Sour Gum

3 to 4 feet	8.00	70.00

Platanus, American Sycamore

6 to 8 feet	8.50	75.00

Prunus Newport—Purple Leaf Plum

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4 to 5 feet	9.00	80.00

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$18 to $45 in 1954. The price range reflects a wide variation in quality, production costs, lumber markets, and competition for stumpage. Where in these ranges is parity? It is difficult to determine on any fair or acceptable basis. Witness the annual controversy engendered by the effort to determine parity for farm products.

Who would make the decision as to what constituted parity prices for all forest products of the United States for 30 or 40 major tree species, more than 100 minor ones, and a host of products for nearly every species? How would parity account for the multitude of variables of quality, production costs, and markets? What would be the philosophy behind the determination of parity prices? Would it be necessary to set them high enough so that the average small forest land owner with an average of 60 acres could make a good living from stumpage sales with no appreciable expenditure of effort? Would they be set low enough so that the inefficient woods operator could prosper, or would the price be so high that forest product markets would be lost to competing materials? Should we subsidize marginal operators? Will the government fill any market void and buy the stumpage, the lumber, the ties, the poles, the pulpwood and let it rot in order to conform to the practiced theory of parity? Similar results have followed the operation of the agricultural price support program.

All of these problems, and all of the difficulties they point up, would have to be solved in order to effectuate the proposal of Senator Humphrey. It appears that first the federal government would have to employ a large force to collect price data on all forest products of any consequence in every timber producing county in the United States. Next, studies would have to be conducted to devise grading of all forest products, including stumpage, lumber, pulpwood, poles, ties, and so on. The price data and other information forwarded to Washington would have to be summarized, analyzed, and at some point quotable figures determined.

Next, would come the establishment of parity prices. This step, of course, might be delayed considerably but the proponents of S.840 have considered it and undoubtedly will request some determination on a trial basis pursuant to additional legislation. In the final analysis, will parity not be the opinion of some member or members of the federal administration acceptable to the current philosophy of a political majority?

Having established the price reporting service and having determined parity prices, it is foreseeable that the next logical step would be price control through parity price supports. These would be high enough, presumably, to enable processors of forest products and forest owners to withhold their timber from the market much the same as the federal government does when it can find no bidder for its timber at its concept of a fair price. Ultimately, another step would perhaps be necessary to establish an economy of scarcity that would make price control function. That step would, of course, be the regulation of the cut from individual owners' tracts, the management and operation of lands under government approved plans of management, in short the final achievement of the strict regulatory programs that were first advanced by the extremists of our profession over fifty years ago.

Regardless of the knowledge that opponents of this bill have been and will continue to be called monopolists who are choking free enterprise, exploiters of small land owners, outbargainers of small sellers, and opponents of the enrichment of the field of forestry knowledge, any person truly interested in maintaining private enterprise in forestry cannot afford to sit idly by and acquiesce in the passage of legislation that seems destined to remove us completely from the realm of free enterprise and place us in an inferior position in the American scene.

Earlier in this paper I adopted the premise that any legislative measure proposing further infringement on our system of free enterprise demands careful examination. My study found this one unsound and dangerous. This legislation constitutes an attempt to socialize our sector of the national economy. I submit that industrial foresters must employ their best efforts to defeat it.

Subtropical Wonderland

(*From page* 25)

Florida. In 1935, he set aside some 85 acres near his Coral Gables home to be transformed from swamps and pine groves into a botanical paradise and a living memorial to those intrepid men and women—the plant explorers—who combed the earth for trees and plants to enrich our own horticulture. Particularly did Colonel Montgomery want to honor that dean of botanical scientists and his good neighbor, Dr. Fairchild.

Colonel Montgomery had first become aware of Dr. Fairchild's work through reading one of the scientist's books, *Exploring For Plants.* In it Dr. Fairchild lamented the fact that many of the tropical plants he had introduced into America had become scattered, and there was no single area where a person, and particularly a scientist, could go and see them.

Before he moved to Florida, Colonel Montgomery had built up one of the largest private collections of conifers at his Cos Cob, Connecticut, estate, and he knew the value of such groupings. In all, Colonel Montgomery spent more than $350,000 buying the site of the present garden, and stocking it with botanical specimens, most of them exotic, or from outside the United States. Between 1935 and the time of his death in 1953, the garden became more than a hobby, it was an avocation, a labor of love by this dedicated man.

Perhaps the most sagacious step of all was when Colonel Montgomery retained the services of one of America's most gifted landscape architects, William Lyman Phillips, who in collaboration with Olmstead Brothers, of Brookline, Mass., planned the grounds surrounding Bok Tower, Lake Wales, Florida, and laid out the new city of Balboa, in the Canal Zone. For Fairchild Garden, Mr. Phillips devised a unique plan, based on the best display of the character of the plants and trees, according to their form, texture and decorative qualities.

Details of Mr. Phillips planning may not be obvious to the average visitor, but there can be no denying that he has created a thing of beauty, whose winding shaded pathways, grassy reaches, and vistas of tall trees overhanging mirror lakes beckon the visitor onward to new prospects equally pleasing. Most strangers want to explore the garden on foot (cars must be parked at the gate), but for those who cannot, or whose time is limited, a "motor train"

makes periodic tours of the grounds, for which a small fee is charged.

But by far the best way to see and to enjoy the garden is to walk. Then, if an unusual tree or plant catches your eye, you can stop and read its tag, which gives not only common and generic names, but also its place of origin, date of introduction, and usually a hint of its economic or ornamental importance. Coral pathways are well cleared, but, should you lose your sense of direction, there are posts bearing maps at frequent intervals.

What are some of the garden's unusual trees? Let us consider the palms first, not only because they are so basically different from most trees found in the United States, but also because 300 different species are established or are proving themselves within this limited area. This is a lot of palms, especially when you consider that all the native American varieties of palms could be counted on your fingers.

Yet there are more than 4,000 known species of palms in the world, according to Nixon Smiley, director of the garden. "We hope eventually to establish some 1,000 species of palms in the garden," he revealed. "About 150 varieties new to the United States are under propagation in the greenhouses now, and seeds of others are being sent by cooperators all over the tropical world—from Africa, Madagascar, Java, Malaya, and the Latin American countries."

To most visitors it is a surprise to learn that the graceful coconut, which flourishes throughout southern Florida and in the West Indies, is probably not a native tree in either of these regions. No one knows for sure just where the coconut originated. Columbus, who recorded everything he saw, heard, smelled or otherwise became aware of, makes no mention of the coconut in his journals, although his discovery of tobacco gets generous attention.

Other interesting palms in the flourishing Fairchild collection include the macaw from Jamaica, the piccabeen from Australia, the queen from Brazil, sugar from Malaya, the chocon from Mexico, palmyra from India, natal from South America, bottle from Cuba, wax from tropical America, sagisi from Amboina Islands, blue latan from Mauritius, the Washington or "petticoat" from California, and scores of others.

Tree names that Americans seldom see without travelling afar are: mahogany, coffee, date, balsa (whose wood is so light that long beams of it can be easily carried), rubber olive, lignumvitae (so hard its wood can be made into bowling balls and bearings), kapok (the pillow stuffing), cigar box cedar, cork oak, teak, surinam cherry (rich in Vitamin C), cinnamon, gum arabic, etc.

While the garden contains specimens of such trees as mango, papaya and avocado, no effort has been made to stock all the tropical fruits, nor even some of the commoner imported trees and plants to be seen in other Miami parks and private gardens. Once an exotic is established in the area, it may be dropped from the Fairchild roster if it serves no decorative or other function in the garden.

However, I was glad to see an albizzia, whose common name is "woman's tongue." Coral Gables has many of these spreading shade trees. Its dried seed pods rattle in the wind, say Orientals, like the chattering of hundreds of housewives. Speaking of tropical shade trees, my favorite is the pongamia, or poonga oil tree, whose dense foliage provides a natural garage. It, too, is represented in the garden.

The list of such oddities could go on and on indefinitely, as such names as devil's cotton, lady coot, railway fence, Buddha's belly (a bamboo), shower of orchids, gumbo limbo, peepul bo tree, oysterwood, and

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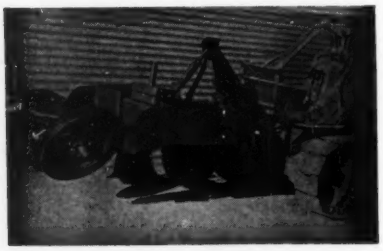

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sausage tree suggest, but Fairchild has some other features worth noting.

One of the showiest of the garden's plantings looks like a low palm or perhaps a large fern, but it is neither. Meet the mysterious cycad, one of the oldest plant species on earth. Its ancestors consider even the forebears of California's redwoods, or of China's ginkgoes, mere upstarts. In fact, were a dinosaur revived today, he would instantly recognize a cycad, and head for it as a juicy morsel. Paleontologists find its delicate features in fossil rock and coal deposits.

Fewer than sixty kinds of cycads survive in the world today, but many more species of them covered the warm parts of the earth millions of years ago, before such broad-leaf plants as the oak, elm and the rubber trees came upon the scene.

Only three species of cycad are native to the United States, and all of them are found in Florida. One, called coontie by the Indians, grew in the pine woods that once covered Dade County and much of the sprawling city of Miami. Florida cycads do not develop trunks, but have thick starchy roots underground, from which the Indians made flour and the early white settlers extracted starch, a pioneer Miami industry.

There is something awe-inspiring about these bizarre plants that somehow have survived, in virtually their present form, for uncounted centuries while almost every other form of life on earth has changed. As might be expected, their sex life is strange. The male in most other plants is identified with pollen, but in the cycads the male is an active germ, similar to that of the male animal. A few cycads can produce offshoots and these can be removed and propagated, but most varieties must be grown from seed.

Along the south shore of the principal lagoon or lake you will see a fringe of pandamus or screw pine, an immigrant from far-off Pacific and Indian ocean isles. "Useful as well as unusual," Mr. Smiley describes this strange growth whose slender tough leaves provide the raw material for handsome baskets, purses and mats. Classes in pandamus weaving are offered at the garden through the adult division of the Lindsey Hopkins Vocational School and the county home demonstration agents.

The visitor from the North who has a solarium or sun porch where tropical plants are carefully nursed along will be astonished to see many of his delicate pets growing outdoors to prodigious proportions. Philodendrons and syngoniums climb to the tops of trees. Catleyas and bromeliads bloom readily along the branches of oaks and in the jungle gardens. Rubber plants here become trees. Monstera and the ground-covering peperomia thrive like weeds.

Scattered about the garden you will find little oases devoted to specialties, such as the Semple vine collection, the Noel Chamberlin hibiscus garden, the orchid collection, the Liberty Hyde Bailey Palmglade, the Garden Club of America Amphitheatre, the Moos Memorial or Sunken Garden, and the cactus garden.

In addition to the necessary greenhouses and potting and equipment sheds, the garden has a fine auditorium, the Nell Montgomery Garden House, where lectures by eminent scientists and plant explorers are given during the fall, winter and spring months for the members and their guests.

There is also a small museum, containing exhibits of the uses made of tropical and subtropical trees and plants, enlarged photographs of palms growing in their native lands, and an extensive library of authoritative books and other publications relating to the botanical life of southern United States and the tropics. Added feature to museum this year is the "David Fairchild corner," devoted to memorabilia of the noted "hunter for plants." His original desk, book cases, and other working equipment are backed by dramatic photographs, showing Dr. Fairchild at work when, as he phrased it in the title of one of his popular books, "The World Is My Garden."

Go to the Fairchild Garden any season of the year and you are sure to see one or more flowering trees—such as cassia, spathodea, royal poinciana, bombax, triplaris, frangipani, chochlospermum—in bloom. But do not expect to see all of them in blossom at the same time. Tropical plants simply do not subscribe to the habit of blooming only in the spring. In Florida many flowering plants reverse the usual northern practices, and put on their showiest efforts in the fall and winter but are quite drab in spring and summer. Most spectacular of the garden's summer blooms is the schefflera, or Queensland umbrella tree, producing spikes of brilliant red flowers that look like a bomb bursting.

There is nothing static about the

Fairchild Garden. New trees and plants are constantly being introduced, and recently more ground was acquired from the marshy lowlands near Biscayne Bay by the simple expedient of dredging out lagoons and piling up the sand and coral rock around them. These will become testing grounds for trees that like to have their roots in salt water. Eventually the garden will cover more than 100 acres.

Director Smiley says the garden's basic development will not be completed for another ten years. "But when it is completed," he adds, "we hope to have one of the outstanding botanical gardens in the world, as well as a scientific institution which will be rated among the best in the country."

Island Wildlife Refuge

(*From page* 31)

one-time head of the old U. S. Bureau of Biological Survey (since absorbed by the present U. S. Fish and Wildlife Service), drove the first artesian well on the island in 1945. Darling, whose home is on Captiva Island to the north of Sanibel, prodded the Florida Game and Fresh Water Fish Commission to set up a wildlife refuge during that same year. His artesian well assured a steady supply of fresh water, and state authorities immediately became aware of the wildlife possibilities. Two years later, the area became a federal wildlife refuge by presidential proclamation. Another pioneer resident, Frank P. Bailey, leased 80 acres, and shortly thereafter the federal government put down another artesian well and the refuge actually came into existence.

During those years the Sanibel National Wildlife Refuge was pitifully small, as such areas go. But in 1952, Uncle Sam started purchasing small quantities of land until on December 5, 1956, the U. S. Fish and Wildlife Service announced that 3,169 acres of the island were being devoted to the preservation of wildlife, mainly waterbirds. Sanibel National Wildlife Refuge had become of age and was destined to form an important link in the chain of federal wildlife refuges throughout the United States.

Meanwhile, in 1950, William D. Wood was appointed manager of the expanding wildlife area. Under his direction, a semi-arid brackish marsh has been transformed into an area of intense productivity by the installa-

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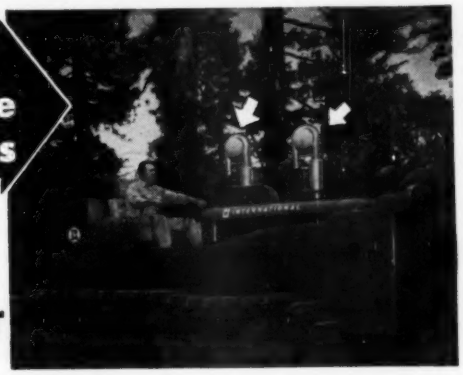

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tion of still more artesian wells and the construction of pools. A proved plan of waterfowl planting has attracted and is supporting an augmenting amount of migratory waterfowl each year as well as the regular year-round avian residents.

The birds on Sanibel get along surprisingly well with the human beings who dwell thereon. Despite the confining restriction of size (or rather, lack of it) there seems to be room for all. From my observation of federal wildlife refuges (and I have visited many in every section of the nation) there seems to be an unspoken feeling of mutual trust, understanding and respect between the humans and wildlife on Sanibel. This "en rapport" contributes largely to the success of the refuge on the island. Without it, Sanibel could well be just another Florida island dotted with cottages where the appearance of a white heron or a mallard duck would be a curiosity.

It is indeed fortunate that the birds on Sanibel have learned to accept the human beings. Otherwise there would be no wildlife refuge there. This does not mean to say that *all* federal wildlife refuges should be populated with humans as well as birds. I doubt if the arrangement would work, in most cases. Somehow, at Sanibel, the situation is different — in fact it is unique.

There is one form of "wildlife" on Sanibel that everybody could do without. This unwanted species is the mosquito. During the summer months and after heavy rains the winged stingers become more than a mere nuisance. However, Mr. Wood is taking steps to eradicate the insects. He is introducing mosquito larvae killing minnows into the ponds of the refuge. When the minnows get the upper hand, Sanibel will become more than ever a wildlife paradise. As matters stand now, Sanibel has acquired dignity, stature and importance as a national wildlife refuge despite difficulties which in most instances, would be prohibitive. It is heartening indeed to learn that wildlife does not have to be sacrificed on the altar of human endeavor. Sanibel is setting an example that other areas in Florida would do well to emulate.

Will the Snowshoe Join the Ski?

(*From page* 21)

place will be lined solid with cars of every color and license plate in the universe. At its far end is the ski rendezvous. It looks like a western hamlet of the Golden West in rush days. In its center there is what the French call a Place d'Armes and Yankees a Square. Round it are congregated a restaurant, the First Aid Hut, ticket wicket, ski rack, information booth, engine house for the various ski lifts, long veranda and upper balcony for tuckered-out customers and guests, and buildings that would form outposts for a Western motion picture set-up.

You might be less stared at as a sightseer if you donned blending ski clothes and snow-goggles. Proper clothes can be had without cost. Merely salvage from the attic a homburg of doubtful vintage, pluck two feathers from a feather-duster, dye one red, the other green, give the ends a quick curl with a curling iron, tuck them far back in the hat band. This completes your head piece. Now, put on a worn-out union suit which you have dyed a mid-night-blue. The more form-fitting it is the better, especially if you want to rival the females. Have on a pair of galoshes, over usual shoes, and you'll pass without question.

You can now mingle with the ski-carrying customers wending their way from their cars to the "village." You will be in a parade of every kind of human. Great Amazons with the word "hellions" written on each joint of their frames; females who sit down with the low note of a bass drum. There will be dainty magazine cover girls gay with knitted reindeer running around their sweaters. And, of course, many male warriors, mostly in the 20's and 30's but with an occasional patriarch with a white waterfall mustache and applered face.

Arrived at the Place d'Armes you can sit in the brilliant sun on a bench along the warming pavilion guarded by the great ski rack with its innumerable leaning pairs of skis. Far aloft on the close-up mountain's face black ants seem descending swiftly in a zigzag across a broad white sheet. Fairly often a black ant keels over with a grunt silenced by distance, lies still, watching the stars round its head, then like an octopus puts out feelers, struggles to its feet, and begins zigzagging again. Up the

white sheet under an endless steel cable, and at one side a tow, creep steadily a long intermittent line of ascending skiers. You can get up and walk along the queue heading up to the ticket wicket, then watch them book for the ascent. Hanging from an overhead cable are what seem to be large anchors, the T-bars, moving steadily low enough for a customer to snatch one, fit it just above his pistol pocket, and have it boost him along and aloft on his skis which run in a surfaced path. At this layout there are three ways to get to the summit of the long downhill slide; T-bar, rope tow, and by walking on snowshoes up a path so steep and long you'll yearn for an over-night hotel at the half way place.

Snowshoes, it is said, are coming back, since there are many people who don't want to risk broken bones and prefer less strenuous work in the ski activity at winter sports lodges, and hence are beginning to use them to enjoy the color and fun of the general throng. Already a 50-year-old snowshoe manufacturer at Wallingford, Vt., is being revived as an experiment; they are even sponsoring snowshoe races.

Snowshoes are ideal for cruising the winter fields and woods. The long, narrow "Alaska" snowshoe, 10" x 56" with sharply up-flaring toe is best for open country of deep snows, and the club size, all-purpose "Michigan," 14" x 48", and also the "Bear Paw," 14" x 30", for the forests. They still speak well for the artistry and practicability of the North American Indian who originated their design, as he did the equally graceful canoe. Although they appear clumsy for walking, they are quite the opposite. In walking one step goes neatly ahead of the other, clearing the ankle with astonishing precision and ease.

Fastening them to the feet is an all important feature of successful enjoyment. In the old-time days of the far North the fur brigade which brought its rich furs to the H.B.C. trading posts tied on their snowshoes with moosehide thongs which were as soft as velvet. The hitch was elaborate but afforded a precision that was unrivaled. However, even in the coldest weather the thongs became damp from the heat from the feet, causing them to stretch, then harden in a troublesome way. Because of this, snowshoe fans switched to woven lamp wick 1½ inches in width, and easy to obtain. After the foot is in position on the

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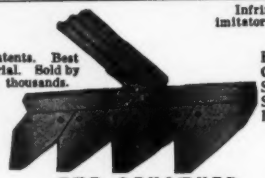

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snowshoe, the thong is placed behind the heel, both ends carried forward and down inside the snowshoe's toe-hole, up on the outside of the toe-hole (thus snaring the heavy web strands of the toe-hole on each side), crossed above and just behind the toes in one-half of a square knot, then the running ends are carried back and a half hitch taken about the heel-strap at both sides of the foot, the ends brought back of the heel and knotted.

The method is set down here because the hitch is a historical one and a native one, tested by long experience, and has proved the inventions of the aborigines can seldom be improved upon.

In this modern day, however, a leather stirrup is attached to each snowshoe into which the foot is thrust, then buckled straps tightened over the instep. It is so arranged that, like the old moosehide thong hitch, it allows the foot to play up and down as when walking in ordinary shoes. With such a hitch the upturned toe of the snowshoe is slightly lifted as the foot rises for a step, and as the strides are made forward one snowshoe glides on its wooden tail, clearing the ankle neatly and sets down ahead utterly clear of the snowshoe behind. They give rise to no struggle. In a few moments one becomes so used to them he can go in a dog-trot.

Some of the snowshoes of the North, built by Indian women were lovely in the fine weaving of delicate pattern in the webb, especially so when woven with caribou webbing which was almost transparent, giving a bright aspect to the snowshoe and cunning to the eye together with the grace of the bowed frame of clean, newly-split white ash. Years ago such snowshoes, really works of art, could be seen in the offices of the H.B.C., specimens which had been made by Indian women for gifts to the company's managers.

Inspired, perhaps, by the old "Tuque Bleue" snowshoe club of Montreal, many a snowshoe club formed years ago throughout northern New England and New York. One had only to witness a weekly "tramp" of the Montreal club to be enticed into the sport, for it is allurring in that it is not confined to any particular ground, the broad surface of the snowshoes taking you easily over places that are otherwise inaccessible. Sometimes the Montreal club had a "meet" or torchlight procession up and into Mount Royal Park, a colorful spectacle with the snowshoers dressed in multi-color Hudson's Bay Company blanket suits, the gayest winter sports costume that ever blazed on northern snows. It stole its pattern and colors from the coureurs des bois (pioneer fur traders and explorers). A multi-colored blanket of the H.B.C. supplied the suit material, and untold hours of weaving provided the ceinture flechee, or arrowhead-figured sash, its ten feet long riot of color wound round the waist and left with hanging tassels. Such a sash is now a museum piece fetching a price of upward of $200.

The multi-colored H.B.C. "point" blanket is the gay old robe of the far, white land of silver foxes. It is pure white, 100 per cent wool, soft as a beaver's ear, and backward from its white edge occur four horizontal, parallel color bands four inches in breadth—black, canary-yellow, crimson and emerald, interspaced with white. In the early days of the fur trade the blankets descended through several sizes from a Four Point to a little one just large enough to cover an infant. Today they are available only in the Four Point and Three and One-half Point. The famous "points" on a white multi-colored blanket are thin vertical lines about six inches in length woven in black at one spot in the blanket's white edge. The largest size, the Four Point, has four of these lines.

Many years ago it was "the thing" to buy a multi-colored blanket, take it to your tailor, and for $25 he would convert it into a regular coureurs des bois uniform. Shortly you blossomed out in a coat to your knees, its skirt-border and sleeve cuffs bearing the brilliantly contrasting bands of color of the blanket. A parka, or hood, hung over your back, having also the bands of color. The trousers were leg-fitting.

It was thus on gala nights the snowshoe clubs of Montreal ascended the mountain, and later had supper at Lumpkin's behind the mountain park. Here there were songs and music, then home across the wooded mountain where other scores of blanket suits made a fairyland of color against the glittering lights of the city spreading for miles.

Its counterpart in small villages took the form of weekly gatherings of old and young in the village square. A "tramp" was made to some forest glen where coffee was boiled over an open fire, and where the same old songs were sung.

If snowshoeing does catch on again in volume the graceful raquettes of the Indian and the accompanying H.B.C. blanket costume of French-Canada will add a gay pompom of color outshining the present ski brigade.

Our Social Responsibilities

(*From page* 19)

and Lake Mead. I wish to call your attention especially to this example of wilderness desecration because I know the area well—having spent much time there during the past five years in ecological study.

Walter P. Cottam wrote in "The Grand Canyon National Monument —A Scientists' Mecca," *The Science Counselor,* March 1956, "Grazing of the Arizona strip was inconsequential until about 1880, but today no available segment of this great expanse of land, including the Grand Canyon National Monument, has escaped the ravages of livestock. Toroweap Valley, because of its abundant grassy plains of early days, its mild winter climate and its proximity to the permanently flowing springs of Mt. Trumbull was especially plundered by the herdsman. Within a decade after the monument was established in 1932, the northern boundary that bisects Toroweap Valley was fenced, of course, in order to exclude these hordes of livestock from the accessible and scenically attractive rim country to the south. Fifteen years of carefully regulated grazing has produced remarkable recovery of the vegetation except on the most heavily abused grassland sites near the monument entrance and on the sagebrush lands of the western valley slopes. But a very few sections of land in the lower reaches of Toroweap Valley, and within the monument area, are still owned by the stockmen. Last April, when I last visited the Monument, a hundred head of cattle were placidly extracting their annual pounds of flesh, shylock fashion for the owners, from the grassy plains surrounding the monument headquarters.

"All of the pigmy forests of juniper and pinyon pine in the monument, including the Kanab Plateau and the area from the unfenced

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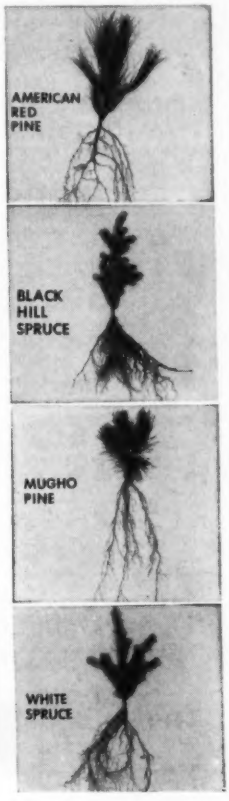

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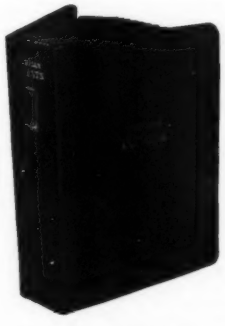

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boundary to the jagged and irregular canyon brink are currently stocked far beyond grazing capacity. Only a small portion of the yellow pine forested Uinkaret Plateau falls within the monument, and fortunately this segment is least disturbed through livestock abuse simply because it is too far removed from permanent springs or other water supply.

"Of the canyon itself, the inner gorge is the only portion of the monument to have escaped completely all livestock grazing. The insurmountable barriers of Nature, and not man's benevolence or farsightedness, decreed this. Much of the outer gorge also remains in a relatively pristine condition because of its rugged terrain, the scarcity of water and the infrequency of points of ingress, but in one of the major side canyons of the outer gorge, 129 cattle are permitted to graze this area year long." A year ago last winter about a fifth of the herd became stranded on a precipitious cliff above one of the numerous defiles of the canyon and all succumbed either to thirst and starvation or tumbled over the cliff in vain attempts to extricate themselves from their imprisonment. In a sense it is a breach of justice that these poor dumb brutes alone must suffer the violent retribution that Nature sooner or later exacts from a misapplied and senseless land use.

What are our responsibilities in the face of silent and legalized carnage of these irreplaceable remnants of nature treasure? Well it is apparently my prerogative to tell you what I think. Is it unreasonable to assume that all conservation organizations should be at least as militant in fighting these silent enemies of resource destruction as they demonstrated last year in killing the visible dragon of Echo Park Dam? The most hopeful aspect I saw in this whole affair was the exhibition of the tremendous power that these societies collectively hold. The most discouraging feature is that biologically speaking Dinosaur Monument was lost to the less visible enemy of overgrazing before we had awakened.

One trouble with our job as conservationists is that deterioration of the biotic, soil and water resources is an insidious thing, which as in the case of cancer, finds the patient half dead before it is detected. And like cancer, the most certain cure rests on an early diagnosis.

Are we prepared to make certain diagnosis regarding the wilderness status of our national parks and monuments? I am convinced that we are not because we lack the necessary technical information both in regards to the nature and amounts of biotic change and the causes that underlie them.

Such information can be gained only through the use of well planned survey techniques adapted and applied to a large variety of types generally found on wild-land areas. They must be designed to yield, on a permanent basis, information from time to time on the various aspects of community composition, and especially on the nature and degree of biotic and soil change in order to be able to assess the effectiveness of various types of management practices.

These quantitative, scientific techniques that are standard tools for the modern ecologists have been used for many years by the U. S. Forest Service. In fact many of our modern survey methods and much equipment used in ecological research must be credited to the Forest Service.

The multiple use concept required in the management of forest lands including the protection of watersheds and the sustained harvest of timber, without damage to soil, was set forth in the organic law creating the forest preserves in the early 1890's. Other secondary uses such as grazing, mining, irrigation and power projects, and a variety of recreational services such as picnicking, camping, hunting and fishing were later recognized by Congress as legitimate privileges on forest lands. To manage these areas for such a multitude of purposes with a minimum of deterioration to the basic resources could never have been accomplished without great adminis-

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trative elasticity, imagination, broad research programs, and a continuing inventory program applied to the biotic communities. These challenges have been well met.

The organic law creating the National Park Service in 1916, on the other hand, provided for the conservation in perpetuity of particular areas of our nation possessing superb scenery, unusual flora or fauna and/or priceless historical values for the enjoyment of our people for all time. To be sure these areas served also certain recreational and watershed functions in common with forest lands. But here, as Alfred Knopf explains all similarities end, for the parks were set aside for other than monetary values. They are charged to sell no lumber, allow no grazing, permit no mining, nor do they tolerate, theoretically at least, any form of exploitation. "If a tree falls in a park," says Knopf, "unless it blocks a road or endangers a building or human life it must lie where it has fallen, slowly to return to the earth out of which it grew."

The Park Service in contrast to the flexibility granted the administration of forest lands is bound by law to narrow and restricted management. The philosophy under which the parks were set aside simply was this: they were to be "so managed as to be left unmanaged."

Such a philosophy, ideal as it may be, *is ecologically unsound in this age of technological dominance.* We can no longer assume that relatively small, protected sanctuaries, surrounded by large land areas continually being modified by man's exploitations, can maintain their wilderness character. The vegetation ravaged by elk in the northern portion of Yellowstone National Park is one sad example of this fact. And Bryce Canyon where winter deer concentrations are threatening the very lives of beautiful aspen groves and other non-herbaceous forage is another.

Without any reflection whatsoever on the magnificent job rendered by the Park Service personnel in the services for which these areas were established, the fact is that the biota in many of our parks and monuments have changed and are changing while the acts of Congress governing them remain inflexible and static.

Whether we like it or not, the time has come when the wilderness portions of the parks and monuments must be provided with a positive program of management. This will require more liberal budgets certainly from Congress and it may require more flexibility in administration. Permanent ecological inventories and additional personnel are sorely needed.

It is, I believe, a great public responsibility of our conservation societies to investigate these problems and to render such aid as the facts warrant. This might be in direct assistance in the acquisition of private lands within the park boundaries to abolish grazing, in assisting needed biological surveys, in political influence, and above all in public education.

New Knowledge of Wood

(*From page* 27)

As Dr. Theodore C. Scheffer, who conducts forest pathology research at the laboratory, puts it:

"Nature's plan is a good one—in its place. The wood rotters of the forest convert fallen timber and branches into organic matter that enriches the forest floor and subsequently nourishes new growth."

With that, the scientists have no quarrel. A forest with no decay would be just a fantastically stupendous woodpile. Anomalous though it seems, without these plants that feed on wood, there could be no young, thriving forests.

Only when wood rotters gain access to wood in use—and we use it for thousands of things—does a problem arise for the pathologists.

The idea of growing fungi on wood as a rapid laboratory test for decay resistance had been experimented with by researchers here and abroad before the FPL scientists looked into its possibilities. Until they standardized the method, however, the only practical way of doing the job was by in-the-field testing.

In field tests, wood stakes of selected species, with or without preservative treatment, are placed in the ground at various locations. They are examined periodically to observe how well they're standing up. By this method, years pass before reliable data can be accumulated. The laboratory "garden" telescopes the time needed to a period as short as weeks.

"Of course, field testing must still

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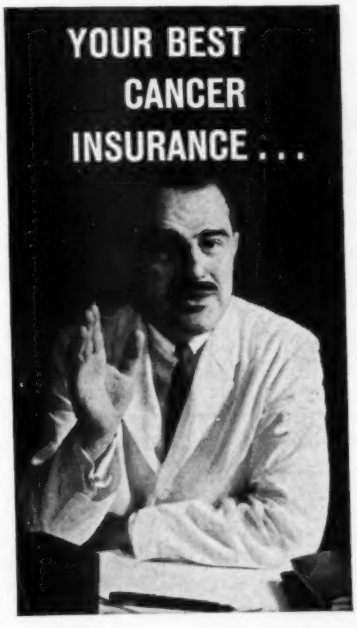

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be done," Lindgren assures you, "and necessarily so. We need results of the service tests to correlate with lab results. Thus we arrive at a complete analysis of the decay resistance of the tested species. We anticipate, however, that some day the laboratory test results will be so reliable that there will be much less need for lengthy in-the-field testing."

Pathologist Catherine G. Duncan, who has done much to perfect the accelerated method, uses it for her work on determining the natural decay resistance of different woods and for testing the efficacy of various wood preservatives. Dr. Duncan maintains a large laboratory garden with trays of test tubes and thousands of test bottles in which the fungi are growing.

In test-tube culture the wood-rotting fungi — botanically known as basidiomycetes — are variegated in texture and color. There's the soft, cottony white *Poria monticola*; the bright sulphur-yellow *Polyporus sulphureus*; rubbery, rose-tinted *Fomes roseus*; and the fluffy, golden beige *Lenzites trabea*.

One common test fungus actually resembles a toasted marshmallow in color and texture when growing on blocks. Its fruit, a mushroom, is edible and reputed by gourmets to be excellent flavoring for soups and gravies. To the pathologist, however, *Lentinus lepideus* is a favorite fungus for testing wood treated with preservatives. As Dr. Duncan explains, "This is about the most common of the fungi found on wood of cone-bearing trees that has been imperfectly treated with creosote." It apparently has more resistance to this long-used preservative than most other common decay fungi.

Many fungi have characteristic smells, too. When the test bottles of *Poria monticola* are opened, the moist, mushroomy dampness of the deep forest assails the nostrils. *Lentinus lepideus* has a spicy aroma redolent of anise.

The accelerated method consists primarily of exposing cubes of wood called test blocks, that are in their natural state or treated with known amounts of preservative to be assayed, to wood-destroying fungi that have been grown on smaller "feeder" blocks of wood in bottles half-filled with moist soil. The same general type of soil, and one that has a specified moisture-holding capacity, is always used.

"We might not," explains Scheffer, "get the same results with sand in one bottle and clay in another. For our research we prefer what the geologists call a silt loam. Mixed with the right amount of water, it maintains excellent moisture conditions for fungi during the test period. Thus we can test both natural decay resistance and preservative treated resistance."

The wood-destroying fungus selected for each test must meet many requirements. Does the fungus rot a hardwood, a softwood? Is it a typical products rotter? Is it a building rotter? Does it grow well under lab conditions, and is it tolerant to preservatives?

Because many of these fungi are highly specialized plants, the species of wood selected for a feeder block must be a hardwood if the test block is hardwood, and vice versa.

Fungi used to infect the feeder blocks are preliminarily grown on nutrients in sterile petri dishes. Culturing and transferring are done in a sterile room, and every antiseptic precaution is taken so that there is no contamination.

For accurate, meaningful results, as many as a thousand of these test bottles are set up. In each is a pure culture of a decay fungus growing under ideal conditions to speed up nature's decay process. The room in which they are kept is maintained at a constant temperature of 80° F. and a relative humidity of 70 percent. Fungi growing outdoors never had it so good!

And they respond with such eagerness that, in a matter of weeks, the test block has been reduced to a crumbly mass unless protected by natural or applied preservatives in the wood that thwart the fungus.

The effects of the rotting process can be measured either by visual inspection or more accurately by weight losses.

In visual inspection, the pathologist examines the block for color, hardness, and change in shape. Be-

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ginning or incipient decay is usually accompanied by a change in color. In sawed wood the first signs of attack, depending on the fungus involved, may appear as dark brown spots or as flecks lighter than the normal color of the wood. Well developed or advanced decay softens the wood so that the fibers break off when pried with a knife. The blocks attacked usually shrink unevenly, thus losing their cubical shape.

Each test block and test bottle is labeled accurately to prevent errors in computing test results as well as to identify each cube as to source, species, type and kind of preservative treatment, and other essential information.

On each test cube, feeder block, and bottle are lavished with the same meticulous care. The quantities of soil and moisture added to each bottle must be exact. Contamination is an ever-present risk. Before infection with a test fungus, each bottle, with soil and feeder block, is sterilized for 30 minutes. Even the test blocks, treated and untreated, are surface sterilized to prevent contamination.

Indispensable tools for the daily examination and inspection of these plants and their physiological characteristics are the microscope and microtome. The microscope makes possible early detection and precise examination of decay organisms in wood. The microtome slices wood into sheets thinner than paper, which are stained and mounted on glass slides for microscopic examination.

As a research tool, the laboratory fungus "garden" has already yielded useful crops of information. It not only telescopes time, as compared with the long-used field tests of stakes, posts, communication poles, railroad crossties, and other full-scale wood products. It makes possible close analysis of variations in the natural decay resistance of wood grown in different parts of a tree trunk and quick evaluations of the toxic effectiveness of preservative chemicals against different kinds of fungi.

Scheffer, for example, has used the method to show that western redcedar, long valued for its high decay resistance, varies considerably in this property, depending on whether the wood was formed near the base or higher up in the tree. Valuable comparisons of the decay resistance of different species have also been made, in some instances revising long-held concepts.

In the long run, though, the "garden" may yield its best fruit in the form of information about the usefulness of new preservatives and other methods of armoring wood against the inroads of the wood rotters.

"We've still much to learn," points out Dr. Scheffer, "and anything that helps us learn it faster means that we'll be able to reduce that much sooner our annual staggering losses from decay."

To the farmer who has to replace fence posts, or the householder whose window frames have developed spongy parts, or the fisherman whose boat has sprung a leak at the keel, that kind of information will be good news.

Buffalo — City of Trees

(*From page 35*)

cost. Nevertheless, some of it was eventually executed.

Today, the Queen City's crowning glory is still her trees. It is said by some that she is unequalled by any other city, and that her avenues of elms are unique.

In the early 1950's, Buffalo was on the verge of losing these elms. The Dutch elm disease played havoc. But with the help of the South Park Conservatory Laboratory that fight was won.

Because the city site was primeval forest and because of preservation here and there, fine old trees still exist. Probably the oldest tree in the city, or even western New York, is a white oak, QUERCUS ALBA, located in Forest Lawn Cemetery. Its age has been estimated between 200 and 250 years. It is not the largest, however, due no doubt to its unprotected stand.

The largest tree seems to be an American Sycamore, PLANTUS OCCIDENTALIS, with a diameter of some 84 inches at breast height. It stands near down town and tends to lean to one side as if a stream ran there years ago. In fact, early maps of Buffalo show such a stream.

Of all the trees planted, such as the elm, maple, oak, chestnut, Buffalo can be proud of a wide collection of exotic varieties. In the early planning days the pioneers experimented with many types, some of

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which failed. The successful ones include the pawpaw, Kentucky coffee, flowering magnolia, Russian olive, tulip tree and bald cypress.

One of the surprises for a visitor to this city is to see an avenue of feathery leafed ginkgo trees, once limited to the sacred Buddhist gardens in China and Japan. So well stocked is Buffalo with unusual trees that once when New York declared a ginkgo tree near Grant's Tomb as the largest in the United States, Buffalo boasted one larger.

The city followed the fashion once and had many horse chestnut trees. However, with bugs and boys, and squashed chestnuts on the ground, it lost favor. Foresters know that the best trees for local planting are American elm, Norway maple, European linden, pin oak and Oriental plane, which can stand the city smoke and soot better than others.

The Parks Department tries to plant one tree for each one cut. In new residential areas, planting of young trees is taken as a matter of course, like other services of sewage and electricity. To the world, Buffalo is a "City of Good Neighbors"; to its residents, it is a "City of Trees."

High Cost of Getting Lost

(*From page* 39)

than an ant hill from now on," he told the ranger.

Anticipating "walkaway" rescue incidents the Forest Service has prepared a leaflet called *"What to Do When Lost in the Woods."* It is stocked by all ranger stations and is in the hands of many sportsmen's associations, Boy and Girl Scouts, and is freely distributed to tourists. Many people write the service, in Washington, for it. One request came from a man who gave his address as San Quentin, including a long identification number. "A clear head will find itself," the leaflet says.

Panic is more serious than lack of food or water, clothing, or the presence of animals. Lost persons who keep their heads are a joy to searching parties. Children often come through the ordeal of being lost with little ill effect because they don't know enough of woodland peril to be afraid.

Nine-year-old Blane Myers, lost on Skyland Road north of Portland, Oregon, was found after he had traveled ten miles through huckleberry scrub and evergreen country. As his father fished dead mosquitoes out of the boy's hair and washed his face, the youngster answered questions.

"Yep, I slept. Of course it wasn't like my own bed, exactly. I kept turning on my side because it was hard. There wasn't anything to eat, so I didn't. I thought Daddy's camp was real near. I thought I would find Daddy in the morning. When it was dark I lay down."

A wise little boy. But what was he doing alone in a tangle of huckleberry bushes? Daddy didn't say.

Of course there are dramatic rescues carried out while dozens of press men wait at base and the whole country hangs on news, hoping for survivors. We'll get to those in a minute. But there are times when a ranger gets himself involved in a rescue he'd just as soon his fellow foresters would forget, and fast.

"I was coming into Sperry Glacier Basin where I intended to pitch a tent for the night when I saw a crowd of people running toward me. 'A woman has fallen into a crack in the glacier,' they said.

"I cut a stunted fir tree four or five inches thick and about five feet long. I hiked across 250 yards of ice to the crevassé, dug a hole in the ice, set the pole in it, and packed ice all around it to make it solid. Then I tied two ropes together, tied knots in a rope for hand holds, tied the rope to the pole sticking in the ice and got a couple of men to hold the pole.

"I could see the woman lying in the crevassé. The crack was four or five feet wide at the top and came together 35 feet down, thin as a knife edge. The woman was wedged in about 30 feet down and seemed to be dead as a door nail.

"I slid down the rope. I had some sweat worked up and was it cold! When I got to her I tried to hang on with one hand and pull the woman loose, but I couldn't budge her. The walls of ice were smooth as glass and I couldn't get a foothold.

"She was dead anyhow, I figured, so I stood on her to rest my feet and yelled for the men to haul up the rope and send down an axe. When I got it I chopped a hole on each side of the ice to put my feet in for a hold. I sent the axe back up to the top. When the rope came back down I braced myself and started

SAF Elects Garratt

DR. George A. Garratt, dean of the Yale University School of Forestry, was elected president of the Society of American Foresters for the two-year term 1958-59. Dr. Garratt, who heads the oldest professional school of forestry in America, established in 1900, succeeds Mr. DeWitt Nelson, director of the Conservation Department of California.

Henry J. Malsberger of Atlanta, Georgia, was elected vice president of the society. He is forester and general manager of the Southern Pulpwood Conservation Association, an educational organization formed in 1939 by the southern pulp and paper industry to promote public interest in forestry and the application of profitable forest practices.

Council members were elected as were 16 Fellows, a grade conferred by the society in recognition of outstanding achievement in forestry. The council, governing body of the society, is composed of the president, vice president, and nine additional members. The following foresters were elected to the council for two-year terms: B. E. Allen, assistant manager of the Woodlands Division, Union Bag-Camp Paper Corporation, Savannah, Ga.; Philip A. Briegleb, director of the Southern Forest Experiment Station of the U. S. Forest Service, New Orleans, La.; Donald E. Clark, regional forester for the Rocky Mountain Region of the U. S. Forest Service, Denver, Colo.; Charles A. Connaughton, regional forester for the California Region of the U. S. Forest Service, San Francisco, Calif.; Kenneth P. Davis, chairman of the Department of Forestry, School of Natural Resources, University of Michigan, Ann Arbor, Mich.; Maurice K. Goddard, secretary of the Pennsylvania Department of Forests and Waters, Harrisburg, Pa.; William D. Hagenstein, managing director of the Industrial Forestry Association, Portland, Oreg.; J. Herbert Stone, regional forester for the Pacific Northwest Region of the U. S. Forest Service, Portland, Oreg.; Henry J. Vaux, dean of the School of Forestry, University of California, Berkeley, Calif.

to pull the woman loose. I nearly pulled her arm out, she was wedged in so tight. I finally got her loose, put the rope around her waist and the men pulled her up to the surface, then let the rope down for me. I was so frozen by this time that I couldn't climb the rope, so I tied it around me and was hauled out.

"We had no stretcher so four men got hold of the body, one on each leg and one one each arm, one man going ahead with a lantern. When we got across the ice to the edge, we still had a narrow trail to go, leading down through the rocks and around some cliffs, one drop over 20 feet high. We thought it would be easier on all of us to let the body slide down, on a rope, over the cliff. A man went ahead to receive the body when it came down.

"We had a palouser going, and we could see the light below. When the body was half way down it began to spin around and the woman's head hit on the rocks cutting quite a gash in her head. It must have brought her to for she let out an awful yell which scared us half to death. We had been sure she was a goner. After she yelled she fainted again.

"We got her into camp finally, where they had a big fire going and lots of coffee and brandy. We had some all around. When morning came a doctor showed up and he said she'd be O.K.

"I pulled out in the morning ahead of the crowd so I didn't attract attention, but things like that get around.

"No, she never thanked me for getting her out of the glacier."

It is difficult to set up a firm figure on the cost of any one nonspectacular rescue primarily because no account is kept of contributed time and equipment.

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However, in November, an effort was made to record contributions by individuals and business houses in Gunnison, Colorado, when a 26-year-old hunter got lost in the Rainbow Lake country. It affords a typical example of winter search procedures.

One thousand and sixty hours were expended, figured at $2 per hour or $2120. There was a charge of $920 for use of equipment. The Army from Camp Carson aided for three days at an estimated cost of $960. Known expenses, therefore, amounted to $4,000. The body of the hunter has never been found.

During the summer a little girl was lost in the Taylor Park area, also in Colorado. Volunteer aid, at the rate of $1.00 an hour in this instance would have cost $1600 if compensated. At twelve cents per mile estimated cost of vehicles used was $1200. This makes $2800 known cost. Added, uncomputed charges might be use of three planes from an Air Base for six hours each. Chargeable too is an accident to one of the rescuers which demolished a $1500 Buick and put him in the hospital for two months. The child was found, safe.

Although local town folks assisted in digging people out of a snowslide in the Teton National Forest last winter, there was a charge of $171.53 for rental of snow-cats and trucks.

Rescue of two lost Boy Scouts in the High Uintas Wilderness area required two days' effort for about 100 local mounted men. Several sawmills in the vicinity closed down while employees aided in the search. The only fair way to arrive at a fair cost is to assign a reasonable daily wage. Lost wages are always of concern.

It is safe to say that if the central figure in most "small" rescues had to pay real and hidden expenses he'd be in debt for years to come.

Government expenditure varies greatly. The great bulk of costs is borne locally, by counties, states and citizens who volunteer. Agencies like the U. S. Forest Service and the National Park Service enter the picture usually because they are familiar with the local terrain. They can guide and direct. In woods and wilderness areas they are the organizations people think about to handle these emergencies. Often they originate the search and rescue parties by making fast contact with local authorities.

Of course federal agencies spare none of their resources in aid in these emergencies, but the fact remains that lost persons are first of all the responsibility of local governments. There are no federal funds allocated for such emergencies and the time out, taken for volunteer work of this nature, usually works hardship on the forester or park ranger who has to keep his routine work load current over and above these diversions. Much of the staggering total of overtime piled up by these men—not compensable—can be attributed to these "good citizen" efforts.

King-size, heroic rescues often are staged as the aftermath of an airplane crash in wild country, such as the Mount Timpanogos crash of a B-25 airplane in March, 1955. Wreckage was spotted by another plane, broken and snow covered. There was no sign of life.

The big peak which forms the northern summit of the Timpanogos is 11,441 feet high. It slopes downward into a saddle with a lesser peak of 11,383 feet. The wreck lay down some 300 feet from this lesser peak below the cliffs on a steep slope known as "Wooly Hole." Geographically this is in the high triangle between American Fork Canyon and the Alpine Loop.

Prior to setting out, the rescue party tried vainly to pinpoint the disaster by flying over it, but dense overcast made aerial reconnaissance unsuccessful. Plans were made for a ground party to travel by snowcat up American Fork Canyon and the Alpine Loop to a summer ranger station about three miles east of Timpanogos Cave. A rescue squadron from the Air Force Base, weather permitting, was to fly around the summit of Mount Timpanogos, directing the ground party by radio. There was walkie-talkie communication between the ground party and plane, as well as with other searchers in the area.

The snow depth at the crash site was 78 inches, and during the search a new storm piled up another 18 inches of fresh snow on the scene.

Avalanche expert Monte Atwater of the Forest Service, members of the Salt Lake City National Ski Patrol, nearby forest rangers, a rescue squadron from Lowry Air Base and a "paramedico" comprised the the ground party.

To remove the body of four of the five crewmen who crashed, involved use of special skills, special equipment, and great numbers of men, once the plane had been reached. The forest was closed to public use

until the body of the flight engineer was finally recovered.

The lone uranium hunter has recently been getting into the news. As picturesque in our day as Death Valley Scotty in his search for gold, Charles Dicken age 70 and Charles Alger, 75, struck out to find a hidden uranium lode, in Oregon. The boys had another companion, Joseph Castle, age 90, who stayed at base camp awaiting their return. Sleet, rain and snow came upon the prospectors and a search involving St. Helen's ski patrol, national guard units from two towns and all the local manpower that could be mustered by the sheriff's office was undertaken. For four days the search went on. The men were found at last on Clearwater Creek near Paradise Falls. They were in good spirits and had retained all their equipment, Geiger counter, knives and a quart jar of water. On the way out they faltered and were carried home, escorted by foresters and local residents,—three aged men wandering afield on the rim of winter.

Not to be outdone, two ladies took up the challenge and outdid them in both nuisance value and stamina.

Thirty hours after they went for a Sunday drive relatives of Mrs. Alvera Ferguson, 53, and Mrs. William Sharkey, age 75, reported them missing. After three days of combing the area, their missing car was found at the end of a road. Bloodhounds, starting from the car inspired by a pair of bedroom slippers belonging to Mrs. Sharkey, led searchers to a spectacular lookout point high above the Columbia River Gorge. They followed along to a lodge called Nesika maintained by a local trail club. Back again the dogs went to a stone wall with a chain-bound retaining barrier at the lookout point.

Joe Martins of the state foresters' office lowered himself down the slope on a rope, found a pile of broken limbs, moss disturbed and some evidence of stone slippage. They went that-a-way.

Portable searchlights were brought. The canyon below was searched by a five-man team descending the treacherous Gorge on ropes. Thirty-five men, directed by Sheriff Terry combed nearby trails; 13 horsemen, members of the Multnomah County Posse joined with mounted police and police reserves.

Airplanes flew overhead to spot possible signals.

Mrs. Ferguson's daughter said "Mother was brought up on an Idaho forest, her father was a forester. She has a good sense of direction in the woods and is not easily frightened."

A week from the day the search began clues failed. Every inch of a 20 mile area had been combed. Russell Barry who had been on the hunt for the uranium prospectors could not help comparing them. "We just had to search two watersheds where they HAD to be," he said. "There our problem was easy compared to this."

Now the cliff scaling Alpine Club of Hood River with some added local mountaineers again went over the 350 foot cliff to search the area below. At the bottom of a drop they found a wisp of hair.

"This is hers," Mrs. Ferguson's daughters said. "Mother wads up hair combings to put under her hair."

Forester Wanted

The Superintendent of Parks in St. Petersburg has advised us that there is an opening on his staff for a forester. Anyone interested in this position should write to Mr. Allen D. Hall, Superintendent of Parks, St. Petersburg, Florida.

On Monday, September 18, a week and a day after leaving home, the women were found trapped in the Gorge. They had had no food or water for seven days. They had tried to hike down to the main highway which they could see below them at the point where their car got stuck.

"The trail got thicker and thicker and we couldn't go any farther and we didn't know how to go back." For six days, hungry and exhausted, they had been trying to climb hand over hand up the cliff. Mrs. Sharkey had her right eye badly blackened by a twig, but she kept the lead, with Mrs. Ferguson three feet behind.

They reached the bottom of a cliff with a sheer face. They couldn't get around it, and they couldn't go up. "We could see cars driving along a roadway down in the bottom of the Gorge, we could see horses and hear people, but we couldn't attract their attention. We hadn't had a drink for seven days, and we could hear water running down the cliff on the other side of the rock that blocked us.

"There was a little cave in the rocks and we crawled in to rest. Tuesday we tried to signal the folks on the highway and failed. Wednesday we talked of trying to climb back up, but Alvera had dropped her purse down a hole and we couldn't get down to reach it. She had just placed the purse on a ledge and it hopped down out of her reach. Thursday we heard shouts and Friday we were hungry and choking with thirst. Saturday we couldn't stand it any more and started up. We made a shelter Saturday night and rested until dawn and started in again."

They were found about 65 feet from their last shelter by two sheriffs' posse members. They were crawling on their hands and knees in the general direction of the road where their car was mired.

"It is unbelievable that both women could be in such good condition," Dr. McGregor said. "Mrs. Ferguson was weakened from lack of thyroid medicine, her supply was in the purse she lost. The blood pressure of both women was normal and they seemed perfectly fit."

Of the two, Mrs. Sharkey, 75, was in better condition. She talked and laughed with her rescuers as she was carried to the trail club cabin. Two husky sheriffs deputies and four other men tugged and lugged her there.

"Mrs. Ferguson wanted to go back for her purse," the ranger said. "That idea got the deep freeze treatment from me."

Estimate, even loosely, the annual cost of getting these Sunday drivers back and you will have an idea of the bill for lost, strayed or injured hunters, fishers, camera fans, uranium hunters, trail riders, hikers, skiers, botanists, ecologists, boy scouts, campers and tourists.

"What do you say to people when you find them?" I asked the ranger.

"What can you say? You just tell them they're safe, unless it seems a good idea to make them mad."

"Then sometimes you do haul off and chew them out for the trouble they've caused?"

"Oh, just enough to get them moving under their own steam. If they're mad enough they'll get themselves together and walk for a while.

"You see," he said wearily, "it takes eight men to lug a stretcher."

The high cost of getting lost.

Stand Firm, Mr. Secretary

(*From page 5*)

son of Wyoming. His thesis was brief: oil cannot be moved and wildlife can. His reasoning was that since oil pools are of fixed location, wildlife refuges should not be permitted to hinder oil operators.

The first of the three major arguments that were developed by those opposing the regulations was introduced by the next speaker, Senator Joseph C. O'Mahoney of Wyoming.

"It is nonsense to pass a regulation which at this time will give the wildlife bureau (Fish and Wildlife Service) power to shut off oil exploration on wildlife refuges," he warned. This was a reference to the clause in the regulations that would permit oil and gas activities in wildlife refuges and the reserved portions of other federal wildlife lands when the "U. S. Fish and Wildlife Service recommends the issuance of leases thereon."

This point, which was made repeatedly by oil spokesmen, ignores the fact that the wildlife lands would be available for controlled oil and gas leasing. Only on those lands of most critical importance to wildlife would the key decision rest with the service.

A second suggestion that was echoed by many of the petroleum promoters was that of Warwick Downing, Oil and Gas Conservation Commission, Colorado, who urged the Secretary of the Interior to appoint a five-man committee representing the oil industry, wildlife groups, Fish and Wildlife Service, Geological Survey, and Bureau of Land Management to work out compromise regulations.

"Industrial use should have preference on refuges," Downing said, and added that refuges should not be created until the Geological Survey says that no oil or gas is beneath lands under consideration.

The third principal point made by the oil industry was interjected by Fred W. Bush, lands manager for the Union Oil Company of California, who, in addition to his own remarks, acted as a master of ceremonies for several succeeding spokesmen. Bush's main objective was to put into the record of the hearing—undoubtedly for the benefit of the departmental employees assigned to study all that was said — evidence that oil and gas operations are compatible uses of wildlife lands. Petroleum exploration and development, he stated, are "completely compatible in every respect with the use of public lands as wildlife refuges, game ranges, and other fish and game usages."

Endorsing the call for a five-member compromise committee, Bush introduced California State Senator Swift Berry, one-time Forest Service employee and a member of the Hangtown Duck Club. Berry projected several colored slides and commented on the compatibility of waterfowl with natural gas operations. After several letters on the compatibility theme were read into the record, the oil men slipped the ground cloth from their principal target — the Kenai National Moose Range near Anchorage, Alaska.

Drilling this summer on leases granted in the McKay era in the 2-million acre moose range, the Richfield Oil Corporation, for itself and partners Union and Ohio Oil Companies, brought in the first well capable of commercial production in the territory's history. Excitement is great in some Alaskan political and business circles, and drilling on a second lease already is underway.

"In the hotels and bar rooms of Anchorage, Alaska," reports *Time* magazine for December 16, "oil men from 25 U. S. companies waited anxiously last week for word from Washington, D. C., that would start the greatest northern land rush since the Klondike gold strike. They swarmed into Anchorage by the score this fall after Richfield Oil Corporation made Alaska's first big oil find in the nearby Kenai national game preserve." The "word" they waited for apparently was a departmental green light for a land rush in the moose range.

Gordon Goodwin of Richfield Oil Corporation detailed the oil industry's plan of development for the Kenai reserve. Wildlife interests were told that the development would not interfere with either the animals or their habitat. Oil drilling and pumping operations in urban California were shown in a moving picture as an example of the unobtrusive and tidy manner in which black gold can be extracted from the earth.

Wildlife experts were told by the oil men that the drilling and exploration activities would improve browse conditions for the moose, and that the roads punched through the swampy wilderness would be handy travel lanes for the huge, antlered moose.

Representatives of individual western oil and gas associations took the stand to stress the need for appointing a compromise committee to develop substitute regulations. International tension, national security needs, and unrestricted opportunity to exploit the public domain were advanced again and again by the spokesmen as their reasons for opposing the regulations.

Not one person speaking against the new rules differentiated between the public domain and the federal wildlife lands, like the Kenai moose range and other refuge units, that have been withdrawn from the public domain or, in many cases, purchased outright from previous owners. Included also in the oil men's definition of public domain are the thousands of acres of waterfowl marshes that the nation's duck and goose hunters have enabled the service to acquire through their purchase of duck stamps. Under the Duck Stamp Act, every waterfowl hunter 16 years of age and older is required to purchase a stamp on the theory that the receipts will make additional funds available for the purchase of choice waterfowl lands.

The key Alaskan witness at the hearing was Ernest Gruening, former territorial governor and now senator elect under the Tennessee plan. He confined his testimony to the implications of the Kenai oil strike, Alaska's economic requirements and aspirations, and his interpretation of the regulations. Speaking on the second day after several witnesses had been heard in favor of the regulations, Gruening described himself as a conservationist and remarked that the apparent difference in thinking was reflected in individual backgrounds and knowledge. The 70-year old Democrat questioned whether the moose range is accomplishing the purpose for which it was established. Moose are much more numerous, he said, in other areas and show a desire to inhabit the fringes of civilization. This factor, he thought, demonstrated that the moose range was not needed.

Governor Gruening obviously overlooked the fact that, when selecting a site for the moose range, the service chose the Kenai area be-

cause its boggy terrain and isolated location held little interest for the expansion-minded Alaskans. Several other areas with a greater number of moose were rejected because of the possibility of conflict arising with the spread of human habitation.

Gruening opposed any impediment to wide open and immediate exploitation of the Kenai as a follow-up to the recent oil strike. He urged that no obstacles such as those contemplated in the regulations be placed in the path of Alaska's economic and political development.

Gruening then advocated that the Kenai National Moose Range be abolished and that its administration be turned over to the Bureau of Land Management. He recommended further that the adjacent Chugach National Forest be abandoned.

Acting as a summarizer for the oil industry's position on the regulations, Robert Patton, West Coast attorney, asked the Interior Department for "sympathetic understanding" of the techniques, operating difficulties, and hazards of the oil operators. "The search for oil should not be stopped for any reason short of a good one," he admonished and claimed the new rules would "give the Fish and Wildlife Service an absolute veto power to block search in oil and gas in these lands."

Following Patton's presentation, supporters of Secretary Seaton's new regulations brought out many factors that should be taken into consideration concerning the technical problems imposed in the managing of wildlife refuges for their greatest, long-term benefits for game, fish, and recreation.

Mal Xavier, National Fisheries Institute, and Robert H. Paul, Sport Fishing Institute, warned of the danger to fish life from the pollutants that stem from oil fields. Uncontrolled oil operations, it was pointed out, could result in gross polluting of the streams, with a serious impact on sport and commercial fishing. Even under controlled conditions, pipe line breakage, fire, and blowouts pose an uncertain threat to streams, lakes and game habitat.

Mrs. Genevieve H. Oslund of the General Federation of Women's Clubs, Fred M. Packard of the National Parks Association, and Howard Zahniser of The Wilderness Society, spoke in favor of the proposed regulations and asked that they be put into effect promptly.

Also urging early implementation of the new rules was Albert M. Day, former director of the Fish and Wildlife Service and now associated with the Arctic Institute of North America. Citing the administrative dangers inherent in wildlife refuge oil and gas leasing activities, Day recommended a course of action for the department to consider in the case of the Kenai oil strike. His recommendations were based on the idea of orderly development of the oil field underlying the wildlife refuge so as to minimize damage to the surface resources.

Commenting on the Kenai oil strike, C. R. Gutermuth of the Wildlife Management Institute, said, "Regardless of what some Alaskans are saying, the proposed regulations would not prohibit further prospecting and development. . . .

"A single reading of the proposal makes that obvious. The regulations would require that the oil operations be conducted in compliance with provisions required by the decision of the Fish and Wildlife Service, Bureau of Land Management, and the Secretary of the Interior, so that protection of the overall interest in the area will be assured. In other words, the regulations are a guarantee of orderly development.

"Why should the public be expected to accede to uncontrolled invasion that could cause serious and lasting harm to an invaluable area that was set aside for wildlife purposes for many years?

"These questions apply to all federal wildlife lands. Fire, denudation, soil erosion, brine invasion, blowouts, and contamination by oil, all have occurred in the past.

"Contaminants have killed the vegetation, sterilized the soil, and destroyed animals that unwittingly came into contact with them.

"In those instances where oil operations on wildlife refuges have not been significantly harmful, it is due largely to the protective restrictions that have been written into the leasing agreements by competent biologists.

"Sportsmen have been good to the oil companies too! The 1955 economic survey of hunting and fishing shows that the nation's 25 million hunters and fishermen drive over 10.4 billion miles a year for their sport alone. Many millions of dollars worth of the oil companies' other products are used in sportsmen's airplanes, motor boats, and the various mechanized contrivances that fit into the American outdoor recreation picture.

"Two national wildlife refuges — Wichita Mountains in Oklahoma and Crab Orchard in Illinois — are visited by more than two million recreationists annually. Hunters, fishermen, picnickers, photographers, students, and many others throng the refuges in all parts of the country."

Charles H. Callison of the National Wildlife Federation was the final witness. In addition to showing slides and a moving picture on the deleterious effects of oil and gas operations in marsh lands—under controlled conditions — Callison effectively blasted the illusion created earlier during the hearing that the country is in dire straits for oil and other fuel products.

He read from a recent booklet, "Petroleum in Our Modern Society," a publication of the American Petroleum Institute: "In a known oil field the amount of oil lying underground can be estimated by engineering methods. The total of these estimated for the entire U. S. is called our estimated proved reserves. We have found enough oil in the last 50 years that today, in spite of our increasing use of oil, these reserves are eight and one-half times as great as they were in 1900. There is no way of telling what greater quantities are still to be discovered.

"In addition to liquid petroleum, we have other sources of lubricants, gasoline, and liquid fuels. The oil industry can produce them from oil bearing deposits of a mineral, known as oil shale, found in the western U. S. They can also be made synthetically from coal and natural gas.

"It has been estimated that the amount of liquid fuels which can be extracted from oil shales in the U. S. is more than three times as great as the nation's present proved reserves of liquid oil. Enough liquid fuels could be made from our coal deposits to supply our needs for centuries."

The Teachers' Handbook, also prepared by the A.P.I., states that the "estimated proved reserves of crude oil in the U. S. in 1955 were 30.01 billion barrels, more than ten times as large as the proved reserves in 1900."

Callison also read a telegram from A. W. Boddy, president of the Alaska Sportsmen's Council, putting that territory-wide organization on record in favor of the regulations. Boddy called the development of the oil resources important to Alas-

ka, but urged the development on the Kenai refuge be done under the protective guarantee of the proposed rules.

Aside from the important question of whether the federal wildlife lands are to receive the protection they merit so that they can be developed and managed for their greatest benefits to wildlife, one of the most interesting subsidiary questions of the hearing was that of the national oil and gas supply picture. This is important, because it figured so prominently in the statements of persons who opposed the new regulations.

In addition to the information read into the record from the publications of the American Petroleum Institute, a clipping from the *New York Times* of April 26, 1953, touches on this point. At a New Orleans meeting, the *Times* reports, delegates to the spring meeting of the Interstate Oil Compact Commission were told that "foreign oil was ruining state conservation programs." Oil productions allowables were cut back in many of the major producing states because of the flow of imports.

"We are up to our necks in oil," said Ernest O. Thompson, chairman of the Texas Railroad Commission, controlling body of oil production in that state.

In private conversations Interior Department officials are pointing out the peculiar contradiction between statements made by oil spokesmen at the recent hearing and at an earlier consideration of oil embargoes. Embargoes, the oil industry, said, were necessary because there was too much oil. But when it comes to leasing on wildlife lands, the same persons are saying there is too little oil.

Recently a Department of Commerce official was asked: "How much do you think that the oil and gas that might be under federal wildlife lands would contribute to national security?"

"It would get us part way around the block," he replied, indicating that the petroleum resources under the refuges, which comprise only .4 of 1% of the U. S. land mass, are of negligible import.

In brief, then, the question of leasing on wildlife refuges, as developed in connection with the new regulations proposed by Secretary Seaton, has no startling manifestations.

The oil industry stands for immediate and unrestricted exploitation. It assures the public that some benefits will accrue to them, but, of course, profit cannot be overlooked either since it will accrue to the operators.

Those supporting the regulations do so because they believe the public interest in the federal wildlife lands will be protected. Oil and gas operations will not be forbidden; they will be controlled. Refuges will be operated for their intended purpose and public benefit will accrue through the tremendous recreational outlet that will be perpetuated.

Forest Forum

(*From page* 2)

My plan would provide the following:

1. Pay cash for the bare land.
2. Pay for the timber as cut. Payments would be applied to agreed purchase price. This might take 20 years or more depending on trend in stumpage prices.
3. Klamath Indians to receive in addition any increase in prices above average price during year in which agreement is reached for sale of land and timber. This would provide an increase of $60,000 in the total sale price during a year in which there was an increase of $1.00 per thousand feet in average price based on a stated allowable cut of 60 million feet. These bonus payments would be made from timber cut after purchase payments had been completed.
4. No 25% payments to counties from timber income until after Indians have received payment in full.
5. The sale to the federal government would eliminate the customary deductions from Indians for timber sale expenses.

The adoption of such a plan would not only place the Klamath lands under federal ownership but would eliminate necessity of appropriating a large sum for the purchase of the timber with a resulting annual interest charge of possibly $3 or $4 million.

J. Donald Lamont
Route 3, Box 882
Carmel, Calif.

Cooperative Conservation

EDITOR:

May I congratulate you on the editorial, "Adventures in Cooperative Conservation" and the article, "Coon Valley Saga" by Lewis C. French which appeared in the October issue of AMERICAN FORESTS. These were of particular interest to me for I was fortunate enough to have been appointed by Dr. Hugh Bennett to initiate the Coon Valley project and was in charge of it for the first few years of its operation.

Reading your October issue brought back many fond memories of those early days of the project and I always like to reminisce about our experiences. For example, the reference in your editorial to the visit of the late Aldo Leopold to Coon Valley recalls to memory one of our evening staff meetings which he attended, and at which he was commenting on the pioneering nature of the project and the missionary spirit of the staff, and he remarked that it "reminded him of the early days of the Forest Service." Mr. Leopold was a great inspiration to all of us and his wise counsel and suggestions added immeasurably to the success of the project. The same thing can be said of Noble Clark and many of the other staff members of the University of Wisconsin.

I recall the feeling of apprehension we had as to the degree of cooperation we would get from the farmers in accepting our ideas of proper land use and conservation practices. We knew full well that ultimate success depended on the wholehearted cooperation of the farmers. Their response even exceeded our expectations.

At the outset, we had assumed that cash payments to the farmers would be required to enlist their cooperation in making the land use changes and adopting the conservation practices desired. So, in the early days of the project, this was done. It was sort of a combination of the ideas embodied in the present Soil Bank and Agricultural Conservation Programs. The cash payments were relatively small and we soon found that they were not an important factor in the farmers' consideration as to whether or not he would or could cooperate in the program. So the payment plan was abandoned and only those cooperators who came into the program during the first couple of months received any cash subsidy. There was not a single protest from subsequent cooperators who did not receive the cash payment. This was due, in part, to the fact that considerable quantities of fertilizer, grass seeds, and tree seedlings were distributed to the cooperators. But the main reason was that the farmers were quick to realize that the conservation program was good for the land, as well as a means of increasing farm production and income.

I was glad to learn from the article by Mr. French that the farmers of the watershed have now organized a flood prevention association to promote the construction of small upstream flood storage reservoirs. It is especially gratifying that this important phase of a total soil and water conservation program, as now conceived, has come about as a supplement to the land treatment program in the Coon Creek watershed. I sometimes fear that with the present interest in, and emphasis on, "upstream engineering works" throughout the country, that this may supplant rather than supplement the early and often repeated slogan or concept of modern soil conservation to "use each acre according to its capability and treat each acre according to its need." Should the general objective embodied in that slogan ever be abandoned, or its importance minimized, then modern soil conservation and the welfare of our country will have suffered a major setback.

Raymond H. Davis
Commissioner, Joint Commission
on Rural Reconstruction
Taipei, Taiwan

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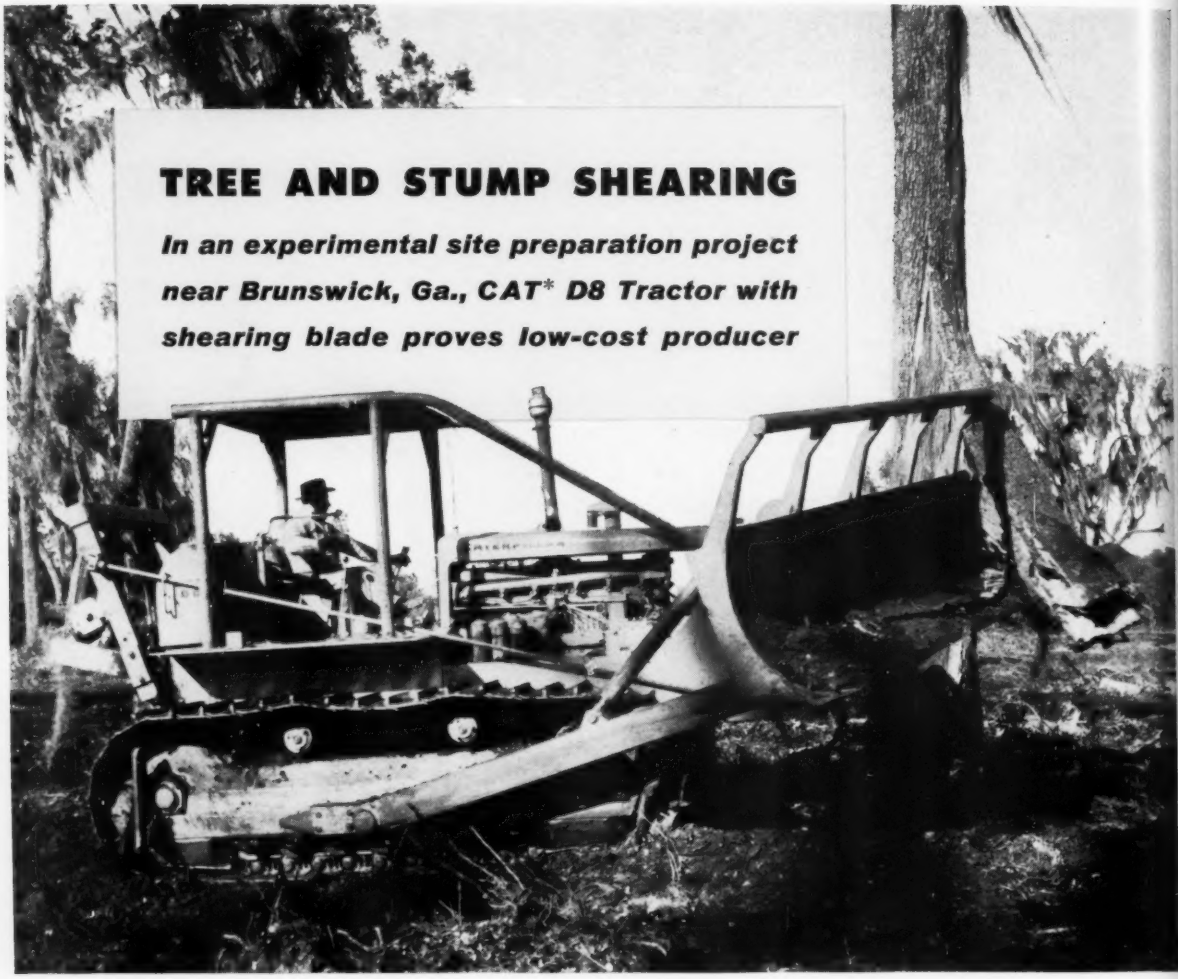
7-29 most powerful one-man chain saw you can own. 7 horsepower, 29 pounds. Powerful enough to bring down any tree in a stand. Fells trees up to 10 feet in diameter.



TREE AND STUMP SHEARING

In an experimental site preparation project near Brunswick, Ga., CAT* D8 Tractor with shearing blade proves low-cost producer

Different phases of forest site preparation were the object of a series of studies this past year in a three months' experiment near Brunswick, Ga. Caterpillar Tractor Co. and the Brunswick Pulp & Paper Co. conducted the studies. One phase covered "Tree and Stump Shearing" with a Caterpillar D8 Tractor equipped with a Rome K-G shearing blade. This blade, mounted on a C-frame to form a 28.5-degree angle with the front of a tractor, has a stinger on its left end which projects about 30 inches beyond the blade itself. The stinger, made of armor plate, is extremely sharp.

The husky 191 flywheel HP D8 worked an area of dry sandy soil, cleared and windrowed except for standing live oak trees that ranged in diameter from 18 to 81 inches. Able to exert about 24,000 pounds of push at the point of the stinger, the D8 hit various trees at a height of 3 to 5 feet above ground level. The stinger pierced and weakened the tree trunks, and the sharp cutting edge and 28° angle sheared the wood, making it possible to push the trees over. Then, by using the stinger and cutting edge in one pass or several, the D8 sheared the stump tops at ground level.

See your Caterpillar Dealer for complete information on this operation as well as other phases of the experimental studies such as: raking and windrowing, chaining, stump treatment, and harrowing.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

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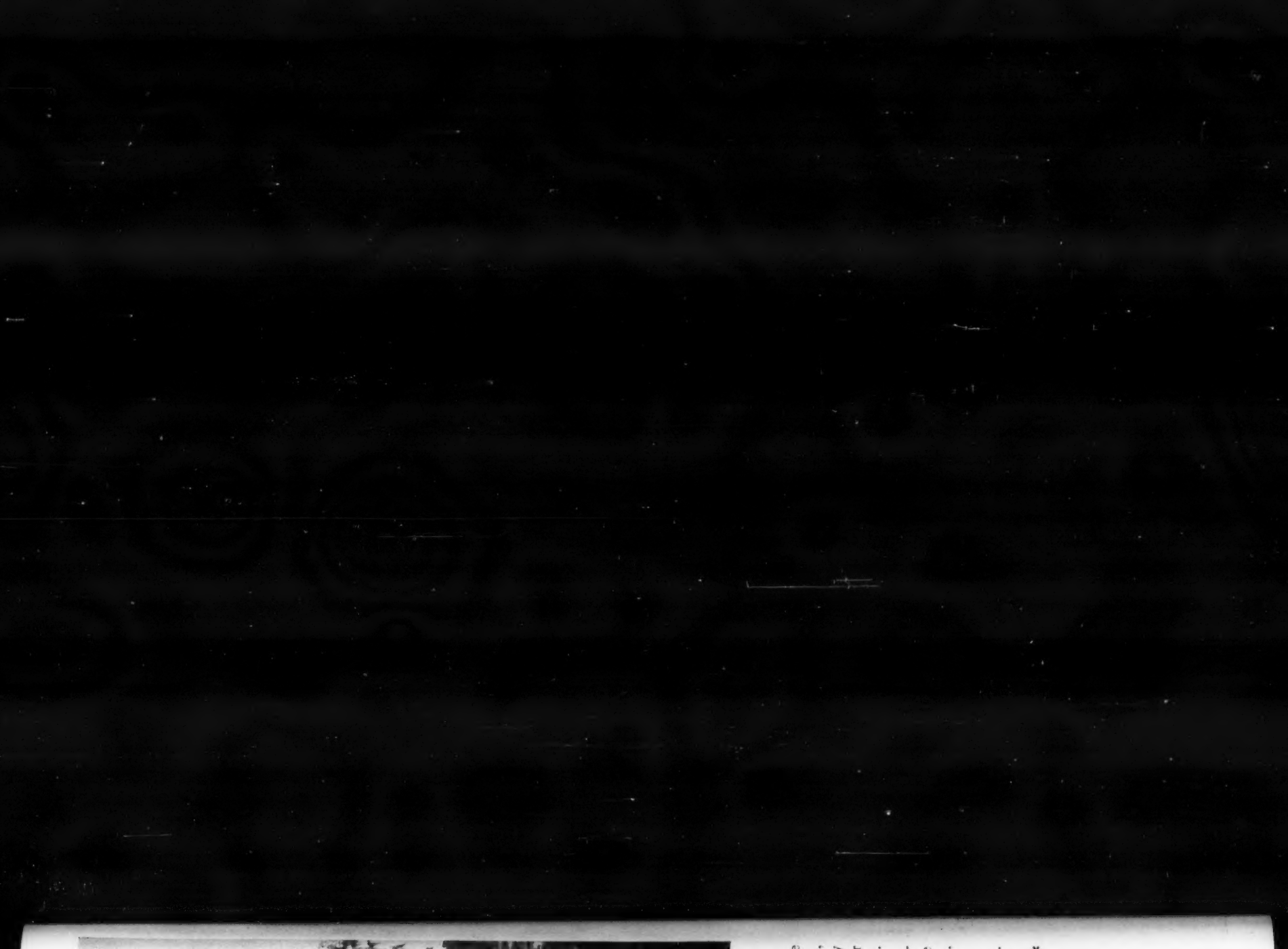
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